the Skeptical Inquirer

THE ZETETIC

Psychology of Near-Death Experiences

Hynek's Conversion / Asimov's Corollary

Testing Thoughtography

Published by the Committee for the Scientific Investigation of Claims of the Paranormal

VOL. III NO. 3 SPRING 1979

the Skeptical Inquirer

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Journal of the Committee for the Scientific Investigation of Claims of the Paranormal
Volume III, No. 3 ISSN 0148-1096 Spring 1979

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THE SKEPTICAL INQUIRER (formerly THE ZETETIC) is the official journal of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP, Inc.)

Manuscripts, letters, books for review, and editorial inquiries should be addressed to The Editor, THE SKEPTICAL INQUIRER, 3025 Palo Alto Dr., N.E., Albuquerque, New Mexico 87111.

Advertising, changes of address, and subscriptions should be addressed to: Executive Office, THE SKEPTICAL INQUIRER, Box 29, Kensington Station, Buffalo, New York 14215. Old address as well as new are necessary for change of subscriber's address, with six weeks advance notice.

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Subscription rates: Individuals, $15; libraries and institutions, $15; sustaining subscribers, $100 or more; back issues $5.00 each (vol 1, no. 1, through vol. 2, no. 2, $7.50 each).

Postmaster: THE SKEPTICAL INQUIRER is published quarterly—Spring, Summer, Fall, and Winter—and printed at Artcraft-Burow, Buffalo, New York. Application to mail at second-class postage rates is pending at Buffalo, New York.

News and Comment

Setbacks for psychic supporters

Recent events have brought several significant setbacks to the public status of claims of extrasensory phenomena. The most spectacular is the complete change of mind by British mathematician John G. Taylor about the likely reality of such happenings. Five years ago, Taylor helped bring Uri Geller to prominence with his statements about the challenge Geller posed to science and by his inability to explain or expose how Geller achieved the effects claimed. In his recent paper in *Nature*, Taylor has reversed his position on such matters completely. He reports on a series of experiments with persons claiming psychic abilities that not only found natural causes for many of the demonstrated "abilities" but also showed that no electromagnetic radiation was being given off by the subjects.

In another area of criticism, Stanford University statistician Persi Diaconis followed up his earlier article in *Science* (July 14, 1978) on statistical problems in ESP research with comments reiterating his contention that poorly designed, badly run, and inappropriately analyzed experiments abound in ESP research. His comments (*Science*, Dec. 14, 1978) are in response to letters by Stanford Research Institute International researchers Harold E. Puthoff and Russell Targ protesting his criticisms.

Then, in January the prominent American theoretical physicist John Archibald Wheeler publicly called on the American Association for the Advancement of Science to reconsider the affiliate status it gave the Parapsychological Association in 1969. In a harsh attack, he called parapsychology "a pretentious pseudoscience" and said, "With the decade of permissiveness now well past . . . the Council and the Board of Directors will serve science well to vote 'parapsychology' out of the AAAS." His comments were made at a symposium at the AAAS annual meeting and are excerpted on pages 12-13. Wheeler later told the SKEPTICAL INQUIRER he had followed up on his public comments with letters asking the AAAS to set up a committee to study the question. Many critics of parapsychology have been irked by frequent references to the AAAS affiliation that claim it to be a validation of parapsychology's scientific acceptability. They welcome Wheeler's bringing the issue into the open. Others consider Wheeler's attack too broad-gauged and fear the possibility of a backlash.

The Kings College mathematician Taylor, in reversing his previous position on ESP phenomena, is the latest

of a long line of prominent physical scientists who over the past century supported the reality of psychic claims only to later reassess their stand. Critics of the paranormal have praised Taylor's honesty, integrity, and forthrightness on the issue, while criticizing the naiveté he originally showed in claiming that deception, intentional or unconscious, could be dismissed as an explanation for the demonstrations of Geller and other psychics. They also doubt that his new contention that electromagnetic radiation is the only known means by which ESP could work will convince supporters of the field. The often-invoked "forces unknown to science" argument will now undoubtedly come more to the fore. Nevertheless his experiments seem to rule out electromagnetism as a medium in alleged extrasensory phenomena and in doing so put a burden on psychic defenders to find evidence for an alternative, which, to the scientific-minded at least, is a big order.

The experiments Taylor reports in *Nature* (276:64-67) are almost as interesting for the explanations they reveal for some "telekinesis" effects as they are for the negative findings on electromagnetic radiation. In needle-rotation experiments, for instance, subjects moving their hands and wrists back and forth around a cylinder in which a needle was suspended by a thread produced a 60° average rotation of the needle. Such demonstrations are frequently pointed to as signs of psychic abilities. Yet when Taylor rubbed anti-static ointment over the surface of the cylinder, "the whole phenomenon vanished," indicating, say Taylor and colleague E. Balanovski, "that the whole effect was due to charge induced on the needle from the outer surface of the cylinder." Furthermore, videotape used to record the experiments showed the subjects touching the cylinder in their efforts to affect the needle.

Likewise, a piece of a drinking straw placed on a piece of plastic on a glass of water inside a glass dome rotated up to 20° even though the subject sat quietly and did not bring his hands near the dome. Here was an effect that one couldn't attribute to the subject's hand motion. Yet the motion of the straw was quickly traced to a convection current inside the dome initiated by the warmth of an electric heater behind the subject. The calculated convection was sufficient to cause the rotation. When the heater was turned off, no rotation occurred. Compass-needle rotation effects were found to diminish when the subject moved away and when a steel shield was placed between the subject and the compass, thus indicating an electrostatic origin for the rotation.

Metal-bending experiments, either by stroking or at a distance, produced no effects whatsoever when full monitoring protocols (videotape, pressure sensors, timers) were followed.

In all of these experiments, and in others involving attempted "psychic healing," dowsing, and telepathy, no electromagnetic radiation above usual low background levels was being emitted by the subjects. Frequencies tested ranged across the entire spectrum of electromagnetic radiation, and in all cases the detectors were within one meter of the subject. Neither were there any effects on ultraviolet detectors or on photographic films. Taylor and Balanovski also tested people for sensitivity to low levels of electromagnetic radiation over restricted frequen-

cies and found no indication of humans being sensitive to those fields. Dowsers who claimed they were sensitive to magnetic fields as weak as a hundred-thousandth of a gauss were actually found to be insensitive to as much as 100 gauss.

Taylor and Balanovski conclude that electromagnetic radiation has been clearly ruled out as a possible mechanism for alleged telepathy, distant-viewing, and psychic healing. As for remote metal-bending, they point out that the energy and power levels emitted by the body are billions of times too low to produce effects on metal.

For those who require a naturalistic explanation to believe in extrasensory phenomena, the Taylor experiments eliminate the main route toward proving their existence. It is clear that Taylor himself is in this category. As he said, "In looking for EM signals emitted by people during alleged ESP events we are therefore testing the reality of the corresponding phenomena."

Taylor's experiments are part of an awkward process he is going through in rejecting his previous supportive statements on behalf of ESP phenomena. As a commentary in *New Scientist* concluded: "The important point is that Taylor now seems to accept that if science cannot explain the 'Geller effect' we must jettison the phenomena, not science. Taylor's personal journey through the valley of irrationality is illuminating. It would be reassuring to think that his conversion to rationality will have an even greater impact than his gullible endorsement of Geller." Adds the commentator wistfully, "Unfortunately, that seems highly unlikely."

—Kendrick Frazier

The New Zealand UFO flap

The early January 1979 flap of sightings and movies from New Zealand once again brought UFOs into the spotlight. One of those achieving instant celebrity status was Terry Olson, a television correspondent from New Zealand who had made a film there of what he called a UFO. Mr. Olson appeared via satellite link from New Zealand on ABC-TV's "Good Morning America," on the morning of January 5, 1979, to describe his alleged UFO encounter. The incident occurred on the morning of Wednesday, January 3, beginning at approximately 3:15 AM.

Mr. Olson told his story: "We saw a light emerge from the sea. It had a reddish color as it came into view ... after a while, once it stabilized, it bobbed around quite a bit, eventually remained stable, and gave us a great yellow chalky light which lit up the sea, and seemed to stay fixed over the entrance of the river mouth." The object, which rose roughly two hours before the sun, was reported to still be visible even *after* the sun had risen.

To anyone knowledgeable about astronomy, Mr. Olson's narrative immediately suggests that the "UFO" sighted and filmed was very likely nothing more than Venus, the "Queen of the UFOs." No other single object has generated as many UFO reports as the planet Venus: only the sun and moon outshine this most brilliant of planets. At the time of this incident, Venus was an extremely conspicuous morning star, near its maximum brilliance, rising for Southern Hemisphere observers some two and a half hours before the sun.

All celestial objects appear reddened at the horizon, just as Mr. Olson

reported. The "bobbing" is attributable to the well-known autokinetic phenomenon, the result of the eye's inability to fixate on a point source of light in the absence of a visual background. The report that the object stayed relatively fixed in one portion of the sky and was visible even after the sun had risen *strongly* suggests that Mr. Olson and his companions were simply observing Venus. Even an untrained observer, spotting Venus before sunrise and following it carefully, can easily keep it in view until the sun is high in the sky.

Another guest on that segment of the show was the best-known UFO proponent in America, J. Allen Hynek, the recently retired Northwestern University astronomer who is founder and director of the Center for UFO Studies. The moderator invited Hynek to ask Olson about his UFO incident.

Hynek: "I am wondering whether he actually saw Venus at the same time." An *excellent* question. Hynek is wasting no time: it is not hard to see what is on his mind. As an astronomer, Hynek knows that Venus was an extremely brilliant object in the pre-dawn sky to both Northern and Southern Hemisphere observers, and he is well aware that Venus has bamboozled countless observers, including policemen and pilots.

Olson: "I can't recognize Venus. I really am not an astronomer." We thought so!

Hynek: "Did you see the object easily after the sun was up?"

Olson: "Yes, we did. Yes, it appeared to be a silvery star, after all the other stars in the sky had fled." One could not hope to find a better description of Venus's appearance as the sun rises. Long after all other stars have faded, that brilliant planet remains visible as a tiny, silvery dot of light in a bright blue sky.

Hynek: "Was any other object photographed, to check the focus [of the camera]?" Another very thoughtful and penetrating question. If the camera was not in sharp focus, a point source of light such as Venus would appear as a large, round blob.

Olson: "Well, unfortunately we couldn't get a landmark or pointer in any way. We were using a long-range lens, a 600 mm lens, and this made things very difficult. The cameraman had never operated it before."

Hynek: "You mention that it moved out of the frame constantly, you had to keep up with it. Which direction did it go out of the frame in?" Hynek has hit the bull's-eye with his final question: the correct answer will drive the final nail into this sighting's celestial coffin. Any object that needs to be kept in view through constant, slow tracking is almost certainly a celestial object, if its direction of travel matches that of a celestial body.

Olson: "To the left, and up." For a moment I thought that this ruled out a celestial object, since rising objects have, in my experience, always moved to the right and up. But a little reflection established that a Southern Hemisphere observer would indeed see Venus rise to the left and up. There can no longer be any reasonable doubt about the object's identity.

Hynek was obviously not at all impressed by the UFO movie, which was being breathlessly ballyhooed on "Good Morning America" that day. But neither did he want to let the wind out of the sails of the UFO Clipper. What did this famous astronomer tell the show's viewers about the fabulous

UFO movie that was so obviously of Venus? Not a thing. "Plainly what we have to do is a frame-by-frame analysis and image enhancement. I'd be very much interested when the results finally come out," Hynek waffled. (The pre-UFO-Center Hynek had no reservations about publicly deflating sightings of Venus.) When the results *are* available, he said, they will appear in the UFO Center's publication, the *International UFO Reporter* (which thus received a *very* nice plug before a nationwide audience).

Olson described sighting a second object, one which sounds very much like a brilliant but fleeting meteor. "This to me is more interesting than [the movie]," Hynek wryly remarked. Even a possible nonmeteor is more interesting than a definite Venus.

Not once did Hynek voice even a suspicion that the UFO movie *might* have captured nothing more than the Queen of the UFOs. The large nationwide audience was left believing that the New Zealand newsman had indeed captured on film a puzzling UFO and that the Center for UFO Studies was greatly interested. It isn't true, of course, but why let a mere fact stand in the way of UFO progress? If these people see an impressive UFO case quickly shot down in flames, support will lag for the UFO believers' long-sought goal of a major funded investigation of UFOs. And they'll never buy the magazine.

True scientific research requires full disclosure of the facts, of course, and that's all well and good. But when you're trying so hard to sell the product, you sometimes encounter a few embarrassing facts about UFO sightings that are better left unrevealed.

—Robert Sheaffer

Earthquakes and psychics

In 1976, the U.S. Geological Survey announced a novel project. As one part of a program of earthquake prediction, evaluation, and monitoring, it was starting an evaluation of earthquake predictions by members of the public. The prediction method was not important. Visions, psychic impressions, astrological charts, or the latest scientific theories were all to be added to the file. They would be entered into a computer and, after the predicted time had passed, the agency's reports of actual earthquakes would be scanned for a possible match.

It was a scientific response to the glut of anecdotal claims about predictions of earthquakes by nonscientists. The goal was to separate useful predictions from inaccurate guesses. People were openly invited to send in their predictions. The only predictions disallowed were those made after the fact.

The U.S. Geological Survey is the official government agency charged with developing methods of earthquake predictions. This was a rare case of a government agency establishing a formal program to evaluate psychic claims.

The preliminary results of the evaluation are now in. As a result of public attention given the program, 2,500 predictions from more than 230 persons were received. The predictions from 92 of these persons were scored and evaluated for the preliminary report, which was published in the Survey's *Earthquake Information Bulletin* (Vol. 10, No. 3, 1978).

Scores were based on the six bits of information that could be given: year, month, day, time, size, and location. A score could range from 0.00

for a clear miss to 1.00 for a perfect hit. Reasonable leeway was allowed. Half-credit was given for a near miss (within 600 kilometers) in location, for example, or in magnitude or time. Because a prediction that an earthquake will occur is far more likely to be successful for an earthquake-prone region like California or Alaska, where there are small quakes almost every day, the value of the prediction was weighted according to seismic activity of the area specified.

Earthquake Information Bureau

Chi-square and Kolmogorov-Smirnov tests were used to evaluate the statistical significance of predictions. People were divided into eight categories, according to the method used. The largest categories, in order, were: astrologer, psychic, amateur scientist, method unknown, sensitive (one who claims to have physical sensations before a quake), dreamer, and religious visionary. No entries were received from professional scientists. The predictions were judged by comparing them to a family of random "predictions" created by the computer's random-number generator, whose predictions were scored and evaluated as though they were real. In other words, the test was to find out whether an actual prediction was any more accurate than one arrived at by pure chance.

The results, described by Roger N. Hunter and John S. Derr of the Survey's Denver laboratories, proved quite interesting. No category was significantly better than chance. ("Significantly" was defined as only one possibility in 100 that the prediction was by chance alone.)

Some of the categories, however, scored significantly worse than chance. This was true of amateur scientists, astrologers, and psychics. Report Hunter and Derr: "The random predictions are significantly more accurate than those of the psychics and astrologers taken as entire groups!" They speculate that these groups' predictions were even worse than chance because the computer's random predictions were at least specific, whereas the predictions by the psychics and astrologers were often vague. This caused their scores to be lower.

On individual levels, the results were again unexpectedly low. Most people's scores and values were lower than the random predictions. Several persons did well on the first few trials, but successive predictions reduced their performance to insignificance.

Conclude the investigators: "The data we have analyzed lead us to believe that these predictions will not be of any value to the scientific community or to the general public."

—*K.F.*

Omni's column on UFOs

When Bob Guccione's new popular-science magazine *Nova* (later changed to *Omni* to avoid a court hassle with WGBH-TV in Boston) began advertising for subscribers in mid-1978, ob-

servers noted with some anxiety that it promised to "provide a window on the strange and exciting world of ... UFOs and Other Extraterrestrial Phenomena," thus indicating that it would treat UFOs as a demonstrably extraterrestrial phenomenon. A number of potential contributors and interviewees balked at any association with another UFO-oriented magazine, withholding cooperation until Guccione's editorial stance on UFOs became clear.

After six issues with regular columns by James Oberg, the scientific community has expressed purrs of satisfaction and admiration, even those scientists who considered *any* treatment of UFOs to be in questionable taste. Now it is the turn of the UFO organizations to complain.

Oberg, a Fellow of the CSICP and a member of its UFO Subcommittee, was widely known to space enthusiasts for his popular articles in *Astronomy, Space World* (he's associate editor), *Spaceflight* (he is a Fellow of the British Interplanetary Society), and *Science Digest*. (Oberg was black-balled by a new editor of *Science Digest* when he and Robert Sheaffer blew the whistle on some dubious photo retouching involved in a pro-UFO article [see our Vol. 2, No. 1], but Oberg's former boss there had moved to *Omni* and asked to see his proposal for a series of UFO articles.) Oberg had published several hard-hitting reviews of UFO books and an exposé of pro-UFO experts' carelessness and fabrication of evidence in reports of the "astronaut UFO" genre, but his writing experience on UFOs was not extensive.

Considering *Omni's* newsstand sales of a million copies a month, Oberg is now the world's most widely published (and, judging by the flood of mail, most widely read) UFO author. His columns included "The Science Conflict" (October 1978), calling for the application of the scientific method and more rigorous standards to UFO evidence; "The Betty Hill Case" (November 1978), critically examining the trustworthiness of hypnotic regression as a tool in UFO interrogations and reviewing the deteriorating credibility of UFOdom's star witness; "Venus, Queen of UFOs" (December 1978), showing how the bright planet can lead to uncanny misperceptions by seemingly reliable witnesses (although timed to coincide with Venus landings, this column presaged the Venus-induced UFO flap in New Zealand that started a few weeks later). "The Coyne Helicopter Case" (January 1979) enumerated the conflict between pro-UFO and con-UFO researchers regarding this spectacular 1973 encounter (the second half of the column discussed the Petrozavodsk "jellyfish UFO" case of September 30, 1977). "Astronomy and the Flying Saucer" (February 1979) gave results of a poll of astronomers on their attitudes toward and experiences with UFOs and asked why UFOs never did (*if* they never did) show up on the meteor-hunting and satellite-tracking all-sky cameras of the 1950s and 1960s. And "UFOs at the UN" (March 1979) punctured the public ballyhoo about how the UN was supposedly about to plunge into the UFO controversy (it was not).

Following the March column, Oberg took several months off to concentrate on feature articles for *Omni* and to work on a book on planetary colonization. He is scheduled to resume his UFO column in mid-1979, having been spelled by a series of guest columnists.

In his columns, Oberg relied on

what he considered reputable UFO research by members of the CSICP UFO Subcommittee (particularly Philip J. Klass and Robert Sheaffer) and by the staff of the Center for UFO Studies, in Evanston, Illinois. Evidently, says Oberg, "the UFO buffs have resented my helping the skeptics break through the wall of secrecy that the rest of the media has thrown up around them."

The MUFON *UFO Journal*, for example, carried this comment in its September 1978 issue: "James Oberg is contributing the 'UFO Update' column for each issue of *Omni*, so we need not expect those reports to be unbiased and objective." UFO lecturer and ex-nuclear physicist Stanton Friedman went even further in his denunciation of Oberg: "As usual . . . he writes first and doesn't bother with getting his facts straight. I say this after having read four articles in *Omni*—ugh! A journalism professor would flunk him I am sure for failing to get first-hand information and for failing to contact the people he maligns before publishing his malignment. . . . There is no doubt that he is one of the 'biggest' men in Ufology. It is just a shame he hasn't taken to heart the ethics of science and journalism and gotten his facts straight. His reliance on Robert Sheaffer and Phil Klass certainly shows his lack of dedication to the truth."

Such criticism doesn't bother Oberg. "There are not enough ardent UFO buffs to support a magazine," he noted, "but there are hundreds of thousands of ordinary people interested in all sides of the UFO question, including sides not published in the pro-UFO media. The column has generated almost half of all the mail *Omni* gets, and the mail is split about 50-50 in support and criticism. Considering the kinds of people most likely to write letters to the editor, I'm really pleased with that level of support." Also pleasing, evidently, have been the words of encouragement from top scientists being interviewed on other topics who have gone out of their way to commend *Omni* for its responsible and reputable approach to the UFO question.

"I am a little disappointed at the negative reaction from some UFO people," Oberg admitted. "Where do we disagree? I claim that the UFO phenomenon is worth studying, just in case there might be something there; but even if not, it's an incredible social phenomenon. And to prove that something is really there, the standards of the past must be severely tightened up, and sloppy or dishonest work simply cannot be tolerated in silence. But UFO buffs don't seem to want to go along, so we're going to the general public."

—*K.F.*

"ESP" in Philadelphia

In February 1978, Channel 10 in Philadelphia ran a series of news interviews with me concerning investigation of the paranormal. The reaction was heavy, with numerous people offering to collect my $10,000 award, and host Joel Segal arranged for the president of the Philadelphia Society of Parapsychology to meet me there for a formal test on February 24. The "psychic" was Victor Totaro, who runs a "school" from his home and teaches the subject to a regular set of pupils. His credentials were not made clear, though he states that he is a parapsychologist.

I had encountered Totaro before, several years ago, when he invited me to visit Philadelphia to see him per-

form. What I saw convinced me that he was doing some remarkably inept second-guessing and rationalizing after the fact. It was not at all impressive, though I had no reason to suspect, at that time, that Totaro did not believe that he actually had real powers. I was annoyed that he subsequently stood up before a live audience on Channel 10 and announced that he had successfully shown me a true demonstration of telepathy; he had done nothing of the kind.

One of his students, Bryan Toder, a conjuror in the area, had dropped out of the class along with a companion shortly after my visit. I had gone there partly because of his involvement, and he said to me afterwards: "I really began to wonder what I'd been doing in that group." Bryan was present when I met with Totaro, in the company of the TV crew and a colleague, Mr. Alexis Vallejo.

With the assistance of a friend, I had prepared a set of ten envelopes, the contents unknown to me. Each envelope was marked with an identifying letter; and a set of corresponding folded and stapled cards were used, so that when an envelope was chosen by the subject the card could be unfastened and the contents, or "targets," would be known without having to open the envelope. I submitted these to Totaro, who had chosen his house as the site of the experiment but now bitterly complained to all that he had wanted to be tested in a "laboratory." And he refused my protocol, saying that I had deceived him by planning to conduct a *scientific* test! Two psychologists present at the invitation of Totaro, David Williams and Ruben Gore, professors working at the University of Pennsylvania, were as surprised as I was at this objection; and I made it clear that my offer of the award was not to apply unless the test were properly conducted, nor would I involve the Committee in any validation that might seem to result from a test done under the unsatisfactory conditions that eventually prevailed.

However, the "test" went ahead, with Totaro carrying out his usual procedure. He decided to use my targets, though not as I wished them used, with members of his group seated all about; but I communicated the targets to the two psychologists, who were "transmitting" mightily to Totaro. At one point, when Totaro was explaining his methods of rationalization in the event of a miss, he said, "For example, if it's an automobile . . ." and one of the targets was, indeed, an automobile. Since I had not selected the targets personally, I was disturbed that a car had been used, since four objects, a car, a house, a tree, and a flower, are invariably the most common "random" objects selected. The one, at least, had also been chosen by the person who selected my targets for me.

I think it will be useful to describe one of his guesses. The target, designated "E," was revealed via the folded card to the two psychologists. Here is the text.

Totaro: "Are you ready, gentlemen? Ah, let me refresh your memory, now. Keep your teeth together. Your feet should be flat on the floor. Take a deep breath, and have a feeling that energy or the thought is being projected from my mind to your m--- from your mind to my mind. . . . All right . . . All right, I got . . . finally I got the charge . . . I see a book with its pages open. Ah, it doesn't necessarily have to be a book; it could be a song sheet, because I see it on top of a piano; but a book could be on top of a piano, too.

Point of View:

The following is excerpted from remarks made by physicist John Archibald Wheeler at the conclusion of a paper he presented on January 8, 1979, in Houston, at the annual meeting of the American Association for the Advancement of Science. The occasion was a symposium: "The Role of Consciousness in the Physical World." Wheeler says he prepared these comments before the symposium as an appendix to his paper, after learning that several workers in parapsychology and paraphysics, including Harold E. Puthoff, were to participate. Wheeler is an internationally renowned theoretical physicist known for his work in relativity theory. He's a former president of the American Physical Society and a former vice-president of the American Philosophical Society. After more than three decades as a professor of physics at Princeton University, he is now on the faculty of the University of Texas at Austin. Readers are invited to comment on Wheeler's views.—Ed.

I would be less than frank if I did not confess that I wanted to withdraw from this symposium when—too late—I learned that so-called extrasensory perception (SCESP) would be taken up in one of the papers. How can anyone be happy at an accompaniment of pretentious pseudoscience when he wants to discuss real issues about real observations in real science? And how can science fail to lose? That is why I, then on the AAAS Board of Directors, voted against the majority of the much larger Council at that time and against the admission of "parapsychology" as a new division of the American Association for the Advancement of Science at its meeting in Boston in 1969. That is why, with the decade of permissiveness now well past, I suggest that the Council and Board of Directors will serve science well to vote "parapsychology" out of the AAAS.

It is not the slightest part of this proposal to prevent anyone from working on "parapsychology" who wants to. Neither do I yield to anyone in my respect for the idealism and good intentions of some I have known in that field. Nor is there in this proposal any intention to deny investigators full freedom of speech and a forum for their fribbles. There is forum enough already in a country that can afford 20,000 astrologers and only 2,000 astronomers. There is forum enough in a Parapsychological Association, a Boston Society for Psychical Research, an American Society for Psychical Research, an International Society for Psychotronic Research, and a Parapsychology Foundation. No one would think of interfering with the freedom that anyone has to publish in the *International Journal of Parapsychology,* the *Journal of the American Society for Psychical Re-*

Drive the Pseudos Out...

search, or the *Journal of Parapsychology*. Neither is it part of this proposal to interfere with the fund-raising that keeps parapsychology going in the United States to the tune of roughly $1 million to $20 million a year. Faith healers can be prosecuted, confidence men can be sent to jail, but no one would propose that parapsychologists be prevented from soliciting—even soliciting for government support. Buy why should the name "AAAS Affiliate" be allowed to give those solicitations an air of legitimacy?

Surely when so much is written about spoon-bending, parapsychology, telepathy, the Bermuda Triangle, dowsing, and when others write on "quantified etherics," bioactochronics, levitation, and occult chemistry, there must be *some* reality behind these words? Surely where there's smoke there's fire? No, where there's so much smoke there's smoke.

Every science that is a science has hundreds of hard results; but search fails to turn up a single one in "parapsychology." Would it not be fair, and for the credit of science, for "parapsychology" to be required to supply one or two or three battle-tested findings as a condition for membership in the AAAS?...

For every phenomenon that is proven to be the result of self-delusion or fraud or misunderstanding of perfectly natural everyday physics and biology, three new phenomena of "pathological science" spring up in its place. The confidence man is able to trick person after person because so often the victim is too ashamed of his gullibility or too mouselike in his "stop, thief" to warn others. ...

There's nothing that one can't research the hell out of. Research guided by bad judgment is a black hole for good money. No one can forbear speaking up who has seen $10,000 cozened out of a good friend, $100,000 milked out of a distinguished not-for-profit research organization, and $1,000,000 syphoned away from American taxpayers—all in the cause of "research" in pathological science.

Where there is meat there are flies. No subject more attracts the devotees of the "paranormal" than the quantum theory of measurement. To sort out what it takes to define an observation, to classify what it means to say "no elementary phenomenon is a phenomenon until it is an observed phenomenon" is difficult enough without being surrounded by the buzz of "telekinesis," "signals propagated faster than light," and "parapsychology."

Now is the time for everyone who believes in the rule of reason to speak up against pathological science and its purveyors.

—John Archibald Wheeler

And it's open. There's a feeling of . . . creativity and knowledge . . . the arts, with this . . . the transmission of knowledge, it could be any structural philosophy, or music, creative arts, but I feel, I personally feel comfortable with the arts. I personally feel comfortable with music, but scientifically, this is the transmission of knowledge. It's made out of paper, it's man-made. Ah, and ah, I like the pick-up here. Ah, I should be within 65 percent accuracy. I'm not going to . . . let me check it out. Why shouldn't I check it out? Why do I have to speed up for the convenience of other people? Sometimes it takes me two minutes to do this. Let me allow myself more time. . . . Oh, my God, I got a graveyard. How come I got . . . I'll have to check it out again . . . Well, a graveyard could mean that whoever wrote the book or the knowledge is dead. So that might be a symbol of a person's knowledge who is not alive today . . . that's probably the occult reasoning process. Let me check it out once more . . . Mmmm! Ancient Egypt! The knowledge of Egypt. I don't have to be precise as to what knowledge the book has, but the book should stand for itself. It keeps coming through. But I got Egypt, now. Knowledge of Egypt. Well, I can't do anything. I can't get any more on that. It's in a book, ah, ah, transmission of knowledge, past, ah, or could be of the arts. [He begins opening the envelope.] The best thing about this is that, ah, you know, when you can do something without the stress and anxiety that most of us suffer, even probably Joel Spivak, due to the tension and such. I have absolutely no tension or feeling of stress. Which shows the confidence of a person's work. [He now has the target revealed, and announces it.] Pinocchio. . . . I misinterpreted my symbols, and knowledge. Pinocchio coming from a book was a very, very poor example of a pick-up. That was incorrect. Pinocchio. It is related to knowledge of a book. I was, I was incorrect in that test. But it is the face of a person that is really not alive, and ah, is still inanimate, so there is a deflection. . . . Larry [addressing his note-taker, who will record these guesses], make a notation: knowledge, the arts, which Pinocchio, in essence, is; and the information comes from a book, so there's a, there's a, it, it shows that the interpretation of symbols was very poor, I should have tried to get a more specific interpretation of what the book contained. Okay?"

We have here a rather good example of the kind of random-yet-comprehensive guessing that is done by these performers, and also the rationalization that follows it. Totaro mentioned these things: book, song sheet, piano, creativity, knowledge, the arts, philosophy, music, paper, man-made, graveyard, deceased, Egypt. In his summary for Larry, he recorded: knowledge, the arts, and a book. He *ignored* the graveyard, Egypt, and paper very carefully. How he can purposely fob off the failure in such a demonstration is beyond explanation. But, as with Jeane Dixon, the failures are attributed to poor interpretation of the symbols.

In all, Totaro tried seven of my envelopes and two written targets from the psychologists. On one of these I tried my hand at Totaroism, writing down a list and handing it to the tester before the "psychic" had said a thing. I wrote: "A sailboat. No animal present. Strong pink/red color. Bad wea-

ther. Water." Totaro mentioned: "Humorous. Facetious. Carnival atmosphere. Clowns. Balloons. Light, frivolous. Place like Disneyland."

The target was "tooth." In my analysis of my guesses, I point out that a tooth does indeed resemble a sailboat, being white and pointed. The pink/red color is obviously the gums, and when there is a thunderstorm coming, I often get a toothache. I leave it to Toraro to invent his own rationalization.

By the judgment of the two psychologists present, myself, the Channel 10 crew, and Joel Segal, there was no evidence of ESP or any other paranormal force working when we witnessed Totaro's performance. However, from the tilt the discussion was taking as we left, there is no doubt that the Philadelphia Society of Parapsychology has effectively rationalized all the failures and discovered numerous correlations that we dunderheads missed altogether.

—James Randi

Committee meets in Washington

The CSICP's annual meeting, held in Washington, D.C., on December 5 and 6, was attended by more than 25 Fellows and scientific consultants of the Committee and several members of the press.

Papers on the scientific appraisal of parapsychology were read by Antony Flew and Ray Hyman; Philip J. Klass and Robert Sheaffer spoke on "UFOlogy"; and astronomer George Abell discussed astrology. Christopher Evans reported on the work of the British branch of the Committee; and James Alcock, on the Canadian branch. David Lichtenstein, Committee counsel, gave a review of the FCC and the Fairness Doctrine, especially as it relates to TV coverage of paranormal subjects.

Those present expressed strong agreement on the continuing need for the CSICP, particularly in the area of public education in science. An education subcommittee was formed, to be co-chaired by Elmer Kral, a schoolteacher from Grand Island, Nebraska, and James Alcock, of Toronto, whose task is to provide critical scientific material on the paranormal for teachers.

ABC-TV was commended for its December 5 network special, "The Supernatural: Fact, Fiction or Fantasy?" Members of the CSICP participated in the program.

After the meeting, members of the Committee met at the Rayburn Building with the staff of the House Science and Technology Committee, briefing them on the increase of interest in the paranormal and the need for public education in science.

A new complaint to NBC:

The CSICP has lodged another complaint with NBC for its program "The Amazing World of Psychic Phenomena," which was aired on the network on January 16. David Lichtenstein, Committee counsel, and Paul Kurtz, chairman, have registered their concern about NBC's continued presentation of paranormal claims as scientifically verified fact. The Committee's appeal of an earlier complaint against NBC is still pending before the FCC.

—Paul Kurtz

Committee Tests

Examination of the claims of Suzie Cottrell

Suzie Cottrell is a 20-year-old woman from Meade, Kansas. Some months before she came to my serious attention, and that of the CSICP, she had appeared on the "Tonight Show" with Johnny Carson on NBC-TV, doing a card trick for the persons present and apparently fooling Carson, who has a reputation as a magician from his early days in the entertainment business. Carson had told me previously that he was not about to allow anyone on the show who claimed paranormal powers unless that person would submit to controls. One such person, Mark Stone, had approached the staff of the Carson show asserting that what he demonstrated was the real thing. That night, Carson wiped him out by implementing a simple change in the conditions of the trick, and Stone failed. Johnny told me that Stone's manager had insisted that he be presented as the real thing and that he was willing to be put to the test. He was.

It was not too difficult to see why Carson had been fooled by Suzie Cottrell. He's a sharp and observant man, but a pretty 20-year-old farm girl was too much for him when she performed a rather obscure card trick that Carson was unlikely to be familiar with. Besides, I have heard a story concerning Jimmy Grippo, a highly skilled card worker in Las Vegas who is said to have touted Cottrell to Carson and to have provided a demonstration of her talents for Johnny in advance of the NBC appearance.

Suzie's father contacted Paul Kurtz of CSICP, asking that his daughter be tested by us. But it was carefully specified that my own offer of $10,000 must not even be mentioned, to avoid putting a crass commercial flavor on the procedure. After some negotiations, the date of March 16, 1978, was agreed upon, and Kurtz designated Martin Gardner and me as those responsible for designing and controlling the procedure. We prepared a testing area by installing a videotape camera and outlining with white tape the exact area that the camera covered. This was to be the limited test area in which all action had to take place. Should Suzie's hands or any of the cards wander out of the test area, the experiment was to stop immediately and return to ground zero, all materials being confiscated and held for examination. We had a good number of decks of cards, all labeled and fresh. And, most important, we were going into the fray with a definitive statement that had been read and understood and agreed to by Suzie Cottrell and her group.

A word about the last circum-

stance would be proper at this point. In my 35 years of looking into these matters, I have found that the most common reason to fail to come to any firm conclusion in such testing procedures is the lack of a firm understanding of the conditions and parameters from the beginning. Thus, I insist that the subject know in advance just what is expected, agree in advance that conditions are satisfactory for the production of whatever miracle is to be shown, know exactly what will be accepted as proof, and finally agree to abide by the decisions reached under these conditions. This way, second-guessing and weak rationalizations for failures are not acceptable.

We told Cottrell that from the moment she entered the test room she would be under video surveillance, and she agreed to that. We asked if all was well—the "vibrations," the weather, the time of day, and so on, and she agreed that things were just dandy. She'd had a press conference in which she announced just how nervous she was, and we wanted to eliminate that alibi as a reason for any failure that might be noted. But she assured us of her excellent state of mind, and we were all ready to go. After Suzie and her parent signed the agreement, we entered the test room.

A TV camera was perched on a tripod, fixed upon the marked-off table. There was, unfortunately, an ABC-TV camera crew there as well; and in spite of my admonitions not to block our camera set-up, they did so repeatedly, but fortunately not at any moment of import. The subsequent story was not used by ABC in the documentary on the paranormal that they were preparing, which was broadcast on December 5, 1978. The reason for this was not made clear; but I feel that since Cottrell failed utterly, it was the kind of thing they refer to as a "non-story." That's the way it often is—successes are glorified, and the far more numerous failures and exposures are discarded.

A reel-to-reel videotape machine sat on the large table, off to one side. Psychologists Irving Biederman and James Pomerantz from the State University of New York at Buffalo were there, since we needed their careful observations and record-keeping for future analysis of what we were about to see. Martin Gardner and I sat behind the chair in which Cottrell was to be seated, one to each side, about five feet away. Several other SUNY people were there to act as a subject-pool for Cottrell to choose from.

We questioned Cottrell about her abilities. She said she could name all of the cards in a face-down deck "some of the time." We expressed understandable dissatisfaction with the estimate, and she then estimated her success rate as 48 out of 52, on the average. On several other feats that had been claimed for her in the papers, and during interviews, she gave similar estimates of success rates. But the one demonstration, the Carson stunt, was the one that she said was her best. She was "almost invariably" successful on that one.

Briefly, the routine referred to consisted of her predicting (in writing) which card would be selected from a spread-out, face-down deck. Now that is about the way it would be described by the unwary and, essentially, that description is correct. In addition, the deck used is a new, shuffled deck not supplied by her. The choice is quite free, and the prediction is written

down well in advance, clearly and boldly, and the paper is retained by another person, not her.

What you have just read is what the popular press has seen fit to use as a description of the famous Cottrell routine. Again, it is quite correct—as far as it goes. But, as the reader will discover, there are a few twists in there that make it far less than convincing as a psychic marvel.

But back to the lab. While the videotape machine near her remained on the ready but not running, Cottrell was told that she might perform her special routine without any controls being imposed. But she also was made to understand that this would not be part of the test, only a warm-up for her. She agreed, but not until her father was ushered out of the room. He made her nervous, Suzie told us; and the father averred that this was usually the case and that he was accustomed to being put out of the room when Suzie worked. There was a certain amount of chuckling at this comment, but Gardner and I exchanged glances. Something was becoming rather evident now, and the picture was a bit clearer.

We gave her a deck of cards. She noted that it was "plastic covered" stock, and she said she didn't much like that kind of card to work with. Immediately, I offered to withdraw the deck and give her a standard Bicycle poker deck, but she decided to use the one offered. It was important, you see, not to allow her any later excuse for failure. Even such a factor as a deck of cards she did not feel comfortable with could have provided adequate excuse (in terms of the usual parapsychological reasoning) for failure.

She shuffled and cut the deck many, many times, commenting at one point that she was "not very good at this sort of thing," with a cute smile. Gardner and I did not smile, recognizing a put-on at first flush, and she dropped the inept act from then on. She fussed endlessly with the cards, until the moment of truth came. Cottrell asked for a piece of paper, wrote something on it, and continued. Gardner and I observed the necessary moves being made, then watched as she suddenly banged the deck on the table and began spreading them wildly about on the surface of the table with both hands in a circular fashion, rearranging them repeatedly and "patting" them into seemingly random patterns. She pushed them into various configurations while she spoke, asking that her subject, a young woman she'd chosen to sit opposite her at the table, reach into the spread and select "any five cards." As each card was slipped out of the spread, Suzie would rearrange them somewhat, seemingly at random. At one point, however, she would stop doing this and back away from the table.

The subject had five cards face-down before her. Cottrell then eliminated some until one was singled out (more about that later) and announced it was the required card. And, in the four times she performed for us, she was right three times! Odds of this being done are a whopping 1 in 36,000—assuming, that is, that no trickery is being used.

But the trickery was quite obvious to Gardner and me. The routine was one well known to card magicians. It has been in print and available to the public for many years. Cottrell's fussing with the cards was quite haphazard until the point where she gathered

the pack up and straightened it out. At that time—the "moment of truth"—she glimpsed the top card as it fell into place. This was the card she then wrote upon the piece of paper as the one that would be chosen. Further shuffling became more orderly, and each shuffle and cut retained the top card in place securely. Suddenly, the deck was slammed on the table top and a rapid spreading commenced, with the curious circular motion. But, we noted, the top card almost immediately got tossed off to one side, close to Cottrell and near her arm, which would cover it during the fussing about. It would be picked up into the motion by one thumb, slid about a bit, then dropped off again in a different position, but always in full control and available.

Finally, Cottrell introduced the chosen card into the main mass of cards, arranging it all by patting and pushing so that the one important card lay in a position where it was most likely to be chosen. As the selection process took place, however, additional patting served to push the desired card into a spot immediately within reach of the subject.

After all, she had 5 chances in 52 of having the required card chosen. And the greater mass of cards were kept in motion, or under her reach, so out of contention. But how was she able, even with the correct card among the 5 selected ones, to force the final selection of that one from the five?

Here is where the demonstration really falls apart. Cottrell used almost *any* means to arrive at the correct one-out-of-five, and seldom the same means. Suppose the needed number was 4. She would say, for example, "Name any two numbers between 1 and 5." If the answer was, "1 and 3," she would brightly suggest that 1 + 3 = 4. A winner! Or, if the named numbers were 1 and 2, she would promptly eliminate cards number 1 and 2, and narrow it down to the remaining three cards, telling the victim to choose "another number," and cashing in if it were now 4, otherwise continuing to play about until only 4 was left. Or, she could make a 2 into a 4 by counting from the opposite end of the row of cards. The variations are endless, and Cottrell knows them all.

On the Carson show, seeing the ace of spades on the bottom of the deck as Ed McMahon shuffled it, Cottrell had asked *four* people at the table to select *five* cards each! Here she had 20 chances in 52 of her force-card being selected as she manipulated them about. She saw McMahon take the correct card, and then, with her back turned, she asked them to choose "the highest card" in anyone's hand—and of course, it turned out to be the ace of spades in McMahon's hand! How can we be so certain of that? Because, in this day of home video recorders, several people taped the performance, and the ace of spades even showed up on the bottom of the deck for the home viewers. Also, viewers saw Cottrell kneeling down at the table to get a better peek.

Which brings us to a point that certainly must have troubled the astute reader who has been following the protocol and implementation thereof in this account. I said that Cottrell had agreed to being recorded on videotape from the moment she entered the test room—but I then referred to the video recorder as "ready but not running" *after* we had already entered the room. True, *that* machine was *not* running—but the actual machine of record,

which was *in the next room, was* running and recorded all of Suzie's "informal" uncontrolled tests in great detail, unknown to her. Thus she made no effort to hide her methods, figuring we were falling for the trick.

Later, of course, we were able to verify our observations very easily and were able to see the peek at the top card, the false cuts and false shuffles, and the final manipulation of the crucial card. Frank Garcia, the renowned expert on card techniques and gambling trickery, has seen this tape and certifies that the observations made by Martin Gardner and myself are quite correct.

Well, Suzie Cottrell, not realizing that we had the cat in the bag already, agreed that it was time for us to get down to serious business. We started up the dummy videotape machine, and Suzie tried her trick several times more. Now, however, there was a slight change in the procedure. We cut the deck just before she spread the cards—and she scored *zero* from then on in. For the reader's information, her chances of getting no cards right in another set of 4 attempts is 92.5 percent in a fair test.

In another test, she asked that each of two different subjects draw 5 cards from the deck and compare their hands to see if they had "corresponding" cards, that is, one would have the same number and color of card as the other (jack of hearts/jack of diamonds, 2 of clubs/2 of spades, etc.) and in this experiment—which she herself suggested—she scored zero.

She tried to predict which persons would select the highest cards in a simple dealing of the pack. She tried it 80 times—again, her idea, not ours, but strictly controlled by us. She failed 80 times.

In another set of 104 tries at predicting cards to be turned up, she fell somewhat short of her estimated 92.3 percent success rate. She scored zero. A following set of 40 predictions failed 100 percent. In a series designed to test her ability to determine the suit of a card by psychic means—an ability that she had claimed—she obtained 22 percent where 25 percent would be expected by chance. And so on.

In a press interview later, Suzie complained that I had been "setting up mental blocks," though I offered to leave the room and the building, if she wished, and she had declined my offer.

But there are two things I have not revealed to you. In the document that Suzie Cottrell signed before beginning the tests was a set of statements that she agreed to, explicitly. She certified that she had not in the past used any form of trickery, subterfuge, or sleight-of-hand, and that she would not on this occasion use any trickery, subterfuge, or sleight-of-hand, and that she would not feel compelled by the pressure of the situation to resort to any such methods. Yet she performed, in magician's parlance, the top-peek, false three-way cuts, top-retaining shuffles, and the Schulein force, followed by multiple-choice forces. There's not a great deal left in the lexicon of the card-sharp.

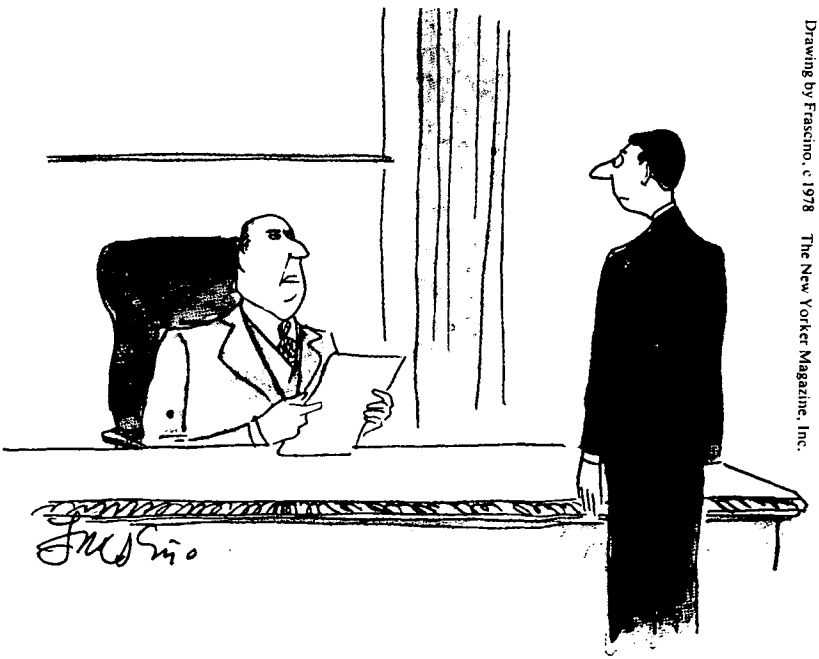
Second, there came a pause in the middle of the testing procedure where Suzie asked for a break. I had just been shuffling a deck for her to use, and I placed it on the table, within camera range, of course, to await her return to the room. When she re-entered, she saw the videotape reels not moving, and she sat at the table while the hubbub went on about her. On the video-

tape, we see her hands pick up the deck. She blatantly looks at the top card, then replaces the deck in position. Then, in a loud voice she announces that she is "ready." You bet she was, and until I reached forward at the last moment to cut the cards before she recommenced the tests, she felt an imminent success in the air.

Suzie Cottrell does tricks with cards. The methods are standard conjuror's methods and not in any way psychic miracles. Her *mise en scène* is an appealing one: she says she wants to develop her powers to help autistic children and that she wants no money and has no interest in becoming a professional psychic. After the encounter in Buffalo, she need not specify the latter intention. However, it seemed fairly obvious, from certain aspects of the examination, that her father was unaware of the trickery and believed that Suzie had genuine powers.

As she left the session, in tears, Suzie Cottrell turned to one of the psychologists who had controlled the tests: "I'm going to forget what you did to me today," she cried, "and if you ever have any autistic children, I'll help them all I can, in spite of what you've done!" Martin Gardner and I turned away in dismay. And Irving Biederman, the psychologist, summed it up for the press this way: "On the basis of the tests, one cannot discriminate between Suzie Cottrell and a fraud." Amen.

—James Randi



Drawing by Frascino, c 1978 The New Yorker Magazine, Inc.

"I've been looking over the application you filled out when you joined us, Armstrong, and it seems you forgot to write in your lucky number."

Psychic Vibrations

It seems that the Xerox Corporation simply cannot refrain from peddling pseudoscience in the classroom to make money for its so-called "education" division, Xerox Education Publications. In a previous issue (Vol. 2, No. 1, p. 20), we reported how Xerox's publication *Read* was introducing trendy pseudoscience into the curriculum: pyramid power, Atlantis, the Loch Ness Monster, etc.

Now Xerox Education Publications' offering of reading materials for grades 10 through 12, *Senior Paperbacks*, has prominently featured (on its cover, no less) *The Amityville Horror* by Jay Anson. This book is a wild yarn about a supposedly haunted house, which even most believers in the occult dismiss as blatantly phony (see SKEPTICAL INQUIRER, Vol. 2, No. 2, p. 95). "This occult thriller is even more shocking than *The Omen*—because it's true!" says Xerox of this book, although it has been thoroughly refuted in at least a half-dozen different publications.

Another book being peddled to high school students is *Ultimate Encounter*, by Bill Barry, the story of the supposed "UFO abduction" of Travis Walton. The Walton incident has been publicly exposed as a hoax by Philip J. Klass, who found (among other things) that Walton had been caught trying to fake his way past a polygraph test conducted by the most experienced examiner in Walton's home state. (Walton didn't succeed, so the UFO proponents who arranged the test did the next best thing: they pretended that no such test had ever taken place.)

Among the other titles that Xerox is offering to students: *Secrets of the Bermuda Triangle*, by Alan Landsburg ("nonfiction"); *Alien Meetings*, by Brad Steiger ("author presents documented accounts of UFO sightings of the third kind"); and *The Ancient Magic of the Pyramids*, by Ken Johnson ("Nonfiction: Author examines pyramids for key to ancient secrets about their energy").

Perhaps Xerox will soon be peddling the *National Enquirer* as "just right for high school students." Parents and educators concerned about recent declines in scholastic achievement may wish to ponder the implications of the above: How can students' increasing ignorance and credulity be blamed on TV when supposed "educational" firms like Xerox are bringing into the classroom such worthless junk food for the mind?

* * * * *

The new year brought a round of predictions by Jeane Dixon for 1979. We

think it's more fun to read the predictions she made a year ago, for 1978, a copy of which we just happened to have tucked away. A few of them:

• "President Carter's Panama Canal treaties will not be approved by the Senate in their present form. This will lead to tumult and upheaval in Panama. Panamanian strong man Omar Torrejos will be forced out of office."

• "Australia will pioneer in the use of solar energy. It will transform from the sun enough electricity to make the whole Pacific Ocean boil."

• "Queen Elizabeth will break tradition by becoming personally involved in politics. In order to save her beloved country from ruin, she will take an active hand in government."

• "A scholar translating an ancient book" will find "a long-lost formula, a wonder drug of antiquity that will be able to heal people today."

• "Greta Garbo will come out of seclusion after almost 40 years. She will reveal bitter regret for having hidden herself away for so long."

• "Pope Paul will surprise the world with his energy and determination."

• "Energy prices will level off."

*****

The Samisdat Press of Toronto offers a novel explanation for UFOs: they are Nazi secret weapons, developed during World War II. When the Reich was collapsing, top Nazi officials, presumably including Hitler himself, escaped in their flying saucers and established a base in Antarctica, where they remain today, plotting a comeback. Samisdat offers for sale books and tapes containing "inspiring and nourishing food for the Aryan soul." Among the most popular tapes on sale are: "Blackshirt and Brownshirt Stormtrooper Songs and Marches"; "Adolf Hitler Speaks"; "Beautiful Nazi Marches and Songs"; and the wartime pro-Nazi propaganda of Britain's "Lord Haw-Haw," "traitor or man of vision?"

Samisdat's latest venture is a "hollow earth expedition in search of holes in the poles." They propose to charter a jumbo jet, paint a swastika on the tail, and fly it to the Antarctic to search for Nazi flying saucer bases, as well as the supposed polar openings leading to the interior of the "hollow earth." The cost is projected to be $9,999 per person. Prospective polar explorers are asked to reveal their "religious denomination" and "ethnic origin," presumably to ensure that members of inferior races will not taint the mission.

Members of NICAP, a major UFO group, recently raised a storm when Samisdat purchased NICAP's mailing list and proceeded to send out materials that were widely perceived as pro-Nazi. Samisdat's mass mailings have turned up as far away as in Holland. Samisdat is said to have found the UFO-Nazi connection to be a very profitable one. Rumor has it that Samisdat is now planning moves that would make it a major force in the American UFO movement. In the meantime, NICAP members complain that they are sick of hearing jokes about their group's director being promoted to fuhrer.

*****

Speaking of master races, a new group, calling itself the Venus Venous Research Corporation, is promoting a

startling thesis. "Are you an Rh-negative blood type? If so, you could be a descendant of the Ancient Astronauts themselves." Founded in California (where else?) by sisters Mabel and Bonnie Royce, the group claims that most persons who have alleged psychic powers, as well as UFO contactees and ancient astronaut theorists, have Rh-negative blood: two prime examples being Brad Steiger and Erich von Däniken. "The total Rh-negative mind," muses one Venus Venous member. "Is this the Second Coming of Christ? ... *We are the caretakers of the universe*, put here to ensure the universe functions as it should." Let us hope that Samisdat and Venus Venous are not the vanguard of a new occult quest for the Superman.

* * * * *

As our society's willingness to accept bizarre and unsupported claims (i.e., its credulity) continues to increase, sightings of fairies and angels are being reported in increasing numbers. *Fate* magazine recently described some "encounters with little men" of no known terrestrial origin. One witness reported a close encounter with a "little man no more than 18 inches high and kind of a dark green in color." Unfortunately, before this remarkable being could be studied by science, he was eaten by dogs. (Fairies and monsters and UFOs *always* manage to slip away, in one manner or another, before the evidence becomes too convincing.) Another witness reports seeing 20 little men dressed in leather knee-pants held up by suspenders, walking down a moonlit country road.

An article in the tabloid newspaper *The Star* tells how supposed "psychic" Francie Steiger is in frequent contact with "Kihief," a guardian angel who descends through the ceiling, wearing a white robe. Mrs. Steiger, whose husband Brad is one of the best-known writers promoting belief in the paranormal, has reportedly been "tested scientifically by PSE (psychological stress evaluator). Result? She really *is* seeing that guardian angel, by golly!

* * * * *

A perfectly formed hexagon: each hole is 10 feet in diameter and 18 inches deep, with a central hole 13 feet wide and 30 inches deep—"To the 500 residents of this Kansas town, nothing short of a flying saucer could have made those depressions in the hard-packed silt," reports the UPI. But the Toronto, Kansas, game warden, John Bills, produced a somewhat unwelcome explanation: the holes had been blasted three years earlier to produce a permanent shallow pond to attract ducks for hunting. During a recent dry spell, the pond dried up, leaving the apparent remains of a dramatic "close encounter of the second kind." But many of the local residents don't believe him. "Folks have gotten real upset with me," said Bills. "They had big dreams about what they found. They just wouldn't believe me." •

Psychology and Near-Death Experiences

James E. Alcock

. . . and if I die before I wake,
I pray thee, Lord, my soul to take.

—From a children's prayer

It seems easy enough for us to accept the ephemeral existence of a bolt of lightning or a cannon's roar. At one moment it doesn't exist, a moment later it does, and in yet another moment it is dissipating into nothingness. We don't ask, "Where is it now?" It is nowhere and it has gone nowhere. It just doesn't exist anymore. Neither do we wonder about the continued existence, in some form, of those garden vegetables whose growth we so carefully guided and nourished until we ended their lives in order to lengthen our own. Mosquitoes and mice, kumquats and kangaroos, they too, at least in the view of most people brought up in the Western tradition, must meet their end without promise of a flora-fauna heaven to receive their eternal souls. It is quite a different matter, however, when we ourselves are faced with shuffling off our own mortal coils. Whether suffering the loss of a loved one, or pondering our own certain demise, it is emotionally difficult to accept that a lifetime of learning, living, and loving, of struggle and self-improvement, leads but back to dust whence we came. For many, life would seem devoid of meaning if death really marks the end of our existence.

During the social evolution of human behavior, religions gradually developed that helped to assuage these age-old existential and ontological anxieties about living and dying. No one knows, of course, how religion

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began; but one can imagine that our cave-inhabiting ancestors, as their reasoning skills slowly grew, must have puzzled over such things as death and the appearance during sleep of the forms of people whose bodies, they knew, had long since provided a snack for some wandering beast of prey. We may not be far wrong if we speculate that, at the same time they gave magical (supernatural) explanations to the mysterious workings of nature, they explained their dreams of the dead by believing that the dead were still alive in some form. Not only would that have accounted for their experiences, but presumably it would have been comforting with regard to their own existence as well.

At any rate, one way or another, religions developed that taught that the "soul" survived bodily death in some form, and this belief is still a central tenet of almost all religions. Such a belief is very functional for most people, since it is anxiety-reducing. To give it up without having anything to take its place is a very serious matter indeed. Imagine the consternation of those among nineteenth-century scientists who also happened to be devoutly religious as the rapid rise of post-Darwinian materialistic thought threatened to explain away, in mechanistic terms, all the mysteries of human existence. So it was that in 1882 a group of British scholars, anxious to find a "scientific" basis for their religious beliefs by means of finding empirical evidence of the postmortem existence of the soul, organized themselves into the first formal parapsychological group, the Society for Psychical Research. Thus, as Rogo (1975) points out, parapsychology was born and bred in a survivalist milieu.

Until very recently, interest among parapsychologists in survival research had waned considerably from the early days, and there has been a great divergence of opinion among parapsychologists about the importance of such research. Joseph Banks Rhine, the acknowledged "dean" of American parapsychologists, believes that survival is an issue that can never be resolved and, thus, that time shouldn't be wasted trying to resolve it. Gardner Murphy, too, believes that no evidence can ever prove postmortem existence (Rogo, 1975). Yet we are now in the midst of a resurgence in survival research, spurred perhaps by the deep existential uncertainty of our times, as well as by the will of James Kidd. Kidd left a fortune to be given to any person or group that could find proof that the soul continues to exist after death; and following a legal battle among 130 contestors, the American Society for Psychical Research was awarded the money ($270,000), which it immediately began to channel into research projects dealing with the question of survival (Osis &

Haraldsson, 1977).

Today, there are a number of researchers studying survival and matters related to it. Some, like Ian Stevenson at the University of Virginia, claim to have experimental evidence for the existence of a body other than the physical one, which, even during life, can at times separate itself from the body of flesh and blood. Others, as we shall see, have concerned themselves with the reported experiences of people who have been near death, whose hearts have stopped beating for a short time but who were eventually resuscitated. Some such people believe that they were transported to another level of existence during what they consider to have been a period of death. (Incidentally, why anyone would consider temporary cardiac inactivity to indicate a period of death is difficult to understand in this day and age.) Yet other researchers claim to have evidence of reincarnation from their studies of subjects hypnotically "regressed" to memories of some allegedly prior existence.

My aim is to examine these claims of evidence of survival and to present information about relevant "normal" psychological phenomena that would seem to account for all such evidence.

The Experience of Dying

According to Raymond Moody (1975, 1977), the experiences of patients who have survived "death" provide compelling evidence of the continued postmortem existence of the soul. People from widely divergent backgrounds and belief systems experience very similar events following their deaths, he says, and this communality of experience points to the *reality* of the experience. While there is considerable variation on the theme, the "theoretically complete model experience," according to Moody, is as follows: At the moment of greatest physical discomfort, the patient hears the physician pronounce him dead, and he hears an uncomfortably loud ringing or buzzing sound. He feels himself being drawn rapidly through a long tunnel. He notices that he has a new body with powers very different from the old one, and may even see his old body lying on the bed with the resuscitation team gathered around it; but his vantage point is outside and above his body. He catches sight of dead relatives and friends and encounters a "being" of very bright light, a "loving, warm spirit." This spirit helps him to panoramically review the events of his past life. He is overwhelmed by feelings of love, joy, and peace. He has a vision of all-encompassing knowledge, the wisdom of the

ages. Finally, he comes to some kind of barrier, but is made to turn back and go, reluctantly, back into his body. Following his resuscitation, he is emotionally very moved and is no longer afraid of death.

Moody is a psychiatrist and is well aware that certain physiological conditions might bring on such experiences, but he takes great pains to argue that no physiologiccal or psychological factors could account for all the data. However, he appears to ignore a great deal of the scientific literature dealing with hallucinatory experiences in general, just as he quickly glosses over the very real limitations of his research method. He argues that, since obvious possible causes of hallucinations can't account for his data (a conclusion he draws more or less by fiat), therefore it must be a matter of genuine psychic experience. This argument is of the classic Abbott and Costello form, where one of them "proves" that the other person "isn't here":

> "Are you in London?"
> "No."
> "Are you in Paris?"
> "No."
> "Are you in Moscow?"
> "No."
> "Well, if you aren't in London, Paris, or Moscow, you must be somewhere else."
> "Yah, I guess so."
> "Well, if you're somewhere else, you can't be here."

If it's not due to psychological, neurological, or pharmacological factors (that can be identified), then it has no natural explanation. The explanation must lie somewhere else, beyond our "ordinary" world. This kind of reasoning is common in the survivalist literature.

We must wonder, too, about the reliability of the memories of Moody's respondents. They related their death experiences to him usually long after they occurred, and generally after having heard Moody speak on the subject. Even then, he finds a wide spectrum of experience, some people reporting only one or two of the key elements, others reporting most of them. Also, he says, many people report no experience at all. It is interesting to note (Moody, 1975, p. 26) that the respondents "uniformly characterize their experience as inexpressible," despite their ability to describe them in considerable detail. Moody admits that people have reported similar experiences in situations where no jeopardy to life

was involved. Mystical and drug experiences can be quite similar, he admits. To account for this, Moody begs the question and speculates that during such non-death experiences, the mechanism that releases the soul at death may be prematurely triggered.

Karlis Osis and Erlandur Haraldsson are both psychologists who obtained Ph.D.'s for parapsychological research. Like Moody, they have been interested in the experiences of the dying. Their research is described in their recent book *At the Hour of Death* (1977). According to them, a typical death experience involves:

1. a period of exaltation shortly before death,
2. a much higher than normal rate of hallucinatory experience just before death, and
3. a "vision," usually while the patient is fully conscious and not sedated. The vision is generally that of a dead friend or relative, who typically is described by the patient as being there to take him into death.

This, if true, would be both interesting and comforting. However, can we have any confidence in the veridicality of the patients' reports? The authors in this case didn't even interview the patients, but instead sent out large numbers of questionnaires to physicians and nurses (in the United States) or personally handed out the questionnaires to medical staff (in India). They argue that these trained observers are likely to be more accurate in their accounts of what the patients reported than would be the patients themselves. This is difficult to accept, of course, since what they were really doing was asking for anecdotal reports about the observer's impressions of what a patient was experiencing in a situation that occurred in all likelihood years before. But to compound the weakness of this work, the researchers used a questionnaire that could, even under the best of circumstances, yield nothing but confusing data. *All* death experiences observed by the practitioners were lumped together. For example,

> Did the patients see hallucinations of persons not actually present? No. of cases _____
>
> Did the patients, or anyone else, identify the hallucinatory person or persons seen as: (a) someone living, No. of cases _____; (b) someone dead, No. of cases _____; etc.
>
> Please describe one characteristic case of such a hallucination of persons.

Except for questions asking about a "characteristic case," it would be impossible to even sort out the respondent's impressions of what he thought the patients saw. If twenty people saw hallucinations and ten saw living persons and ten saw dead persons and ten saw landscapes, which visions were associated with which? The other items on the questionnaires compounded the difficulty of sorting out these impressions.

An additional weakness is that only 20 percent of the people in the American sample chose to respond at all. The authors try to sidestep that problem. They argue that, if bias was introduced at this point, one could check it by comparing reports from those respondents who replied quickly with those of respondents who were more tardy, on the assumption that tardy respondents were more typical of those medical people who were less inclined to accept the afterlife hypothesis. Since no difference was found, they concluded that the 20 percent who did respond were no different in their beliefs, attitudes, and biases than the 80 percent who didn't. They dealt with other possible sources of bias in a similar fashion. What can one say?

Thus, the data is by its very nature unreliable and uninterpretable. All one can conclude from it is that *some* medical people recall *some* patients' having had death "experiences." An analysis of the "characteristic cases" they describe might be useful in generating hypotheses for further research, but nothing more. They seem to have hoisted themselves on their own petard: their defense of the objections they themselves raise is so weak as to be embarrassing.

They also report some data on near-death experiences, the resuscitation type. Strangely, however, their reports differ considerably from those of Moody. Moody emphasizes the "tunnel experience"; they don't report it. Even when discussing Moody's findings, they don't mention the famous tunnel. Why, one wonders? Similarly, they were unimpressed with reports of panoramic recall, another typical Moody experience. One reason for this, they tell us (p. 24), was that such panoramic recall also occurs in other situations, not just in patients who are near death—Penfield, for example, was able to elicit such experience via brain stimulation (Penfield & Jasper, 1954). Again, while Moody tells us that inexpressibility of experience was typical, Osis and Haraldsson tell us that they found only three such cases and take this as more evidence that the experiences were real, since "ineffability is said to be one of the main characteristics of mystical experiences and psychedelic trips."

Elisabeth Kubler-Ross is another famous proponent of the "scien-

tific" basis for life after death, claiming to be 100 percent certain of it. In a recent television interview,* she even told of her own out-of-body experiences and her encounter with a spirit-form that assured her that whatever critical abuse she had suffered because of her writings on the subject was only intended as a test of her mettle and that the time has come for the great enlightenment of mankind with regard to immortality, and apparently she has been chosen to carry the message. When questioned about her conclusive scientific evidence, she said it had not yet been published.

It serves no purpose to go any further in this regard. However, since responsible people are being swayed and seduced by the life-after-life literature, in order to persuade them to give serious pause to whatever they may read in the future, it is worthwhile to review briefly some of the literature relevant to "extraordinary" experiences.

Mystical Experience

Psychologists have not given much attention to what has variously been called "mystical experience," "ecstasy," the "illumination," the "great awakening," and so on. Materialists often react only with quiet amusement to people's reports of having felt the presence of God or having experienced Cosmic Consciousness. Since the sixties many young people have been seeking such metaphysical or "transcendent" states through drugs or meditation, with their interpretations of the "reality" of their experiences dependent greatly on their preexisting belief systems. It is important for us to realize that such states, having been reported by mystics and saints throughout recorded history, in all likelihood represent a normal, though uncommon, "state" of consciousness that can be experienced by virtually everyone, given the proper conditions. A "transcendental" experience, such as that brought on by meditation, for example, can be just as easily brought about by a simple relaxation procedure that parallels, except for the metaphysical trimmings, the meditation procedure followed by the "transcendental" meditators (Benson, 1975). However, since most people aren't aware that such experiences form a part of the spectrum of "normal" human experiences, when they have such an experience it is usually compelling enough

*"Man Alive," Canadian Broadcasting Corporation, October 2, 1978.

to push them toward a metaphysical explanation.

By way of analogy, imagine a young woman who is raised in a rather strange family where she is shielded from all knowledge of sexual function. One day, while reading a book of inspirational verse, for some reason she experiences spontaneous orgasm. How would she interpret such an event? How would she describe it to others? Ecstasy? Ineffable experience? Communion with God? In absence of a normal explanation, a metaphysical one might be very appealing. Lest this example seem too arbitrary, remember that sexual arousal, although apparently not recognized as such, appears to play a part in demonstrations of religious excitation in various parts of the world (Sargant, 1973).

So, as Scharfstein (1973) urges, mystical experience is important and deserves careful study, even if we reject out of hand any metaphysical claims for it. Many features of these experiences, called "peak experiences" by Maslow (1976), are like those of the "near-death" experiences described earlier. For instance, a loss of fear of death is a common consequence, and such experiences often leave the individual with the feeling of having perceived the universe as an "integrated and unified whole," whatever that means (Maslow, 1976).

Peak experiences can be so "wonderful" that they parallel what the person thinks to be an eager, happy dying, a "sweet death" (Maslow, 1976). (This brings to mind the common description of a particularly intense female orgasm as a "little death.") Accounts of peak experiences often contain statements like "I felt that I could willingly die," or "No one can ever again tell me that death is bad." The individual seems to gain a sense of immortality, and then "knows" that life continues after physical death (Greeley, 1974). Why people think of death at times of such ecstasy is an interesting question in itself.

Interesting, too, is the fact that some biofeedback researchers (e.g., Lynch, 1973) have found that subjects who erroneously believed that they were in an "alpha" state reported having highly moving and meaningful emotional experiences. One researcher (Doxey, 1976) himself attests to the near ecstasy involved in the phenomenon: when testing his equipment, using himself as subject, he was led to believe that he was in an alpha state and experienced something akin to a peak experience. Analysis of EEG recordings later revealed that he had not been in an alpha state but that, because of an error in the setting up of the equipment, the light that was meant to signal an alpha-state was malfunctioning. This underlines the important role that expectation plays in such

experiences. A dying person, because of the emotional stress and because of cultural beliefs about death, may be more likely than others to be open to such experiences. Relevant, too, are the findings of Schacter and Singer (1962): Subjects given an injection of epinephrine (a stimulant), but led to believe they had received a vitamin injection that would have no arousing effects, interpreted their arousal as being either angry or happy, depending on the cues in the situation in which they found themselves. Other subjects, *informed* of the arousing side-effects of the injection, experienced no such emotions. It was concluded that the same state of physiological arousal can lead to different "emotional states" and that people choose the label for their emotion depending on the surroundings. If one attributes the arousal to a drug, there is no need to label the emotion at all. It is simply "due to the drug." (Incidentally, this finding does *not* demonstrate that joy and anger have the same physiological basis in natural situations.)

The importance of this cannot be overstressed: our interpretation of emotional experience depends greatly on our expectations and on our "attributions" (i.e., to what do we attribute the cause of the emotional experience).

Out-of-Body Experiences

Quite apart from the issue of body and soul on the deathbed, there is considerable belief among most, but not all, parapsychologists that something like a soul (call it "astral body" or whatever) can spontaneously leave the body during sleep, or even while awake. Some believe that a kind of cord, silver in appearance, links the physical and metaphysical bodies during the out-of-body experience ("OBE"). At any rate, during the OBE, the person sees himself from a vantage point above his physical body. Some researchers have presented evidence that, they argue, gives empirical support to the existence of OBEs: people during sleep (and, so far as I can determine, *not* under visual observation) have supposedly been able, through the agency of their "astral body," to "read" a random number written on a piece of paper placed on a shelf beyond their reach (e.g., Tart, 1968). However, there is considerable debate about the validity of such experiments, even within parapsychological circles. John Palmer (1978), himself a professor of parapsychology, concludes that hypnagogic sleep (to be discussed below) accounts for the overwhelming majority of reported OBE experiences, and that

"the OBE is neither potentially nor actually a psychic phenomenon. It is an experience or mental state, like a dream or any other altered state of consciousness" (p. 21). In line with this view, proponents of the OBE interpretation admit that OBEs are almost always experienced when going to sleep or waking up. These are precisely the moments when hypnagogic (and its relative, hypnopompic) sleep are most likely to occur.

Palmer (1978) argues that in both Western and Eastern cultures death is typically assumed to involve the separation of body and soul and that, regardless of an individual's personal view on the subject, it is likely to be on his mind as he lies dying. The stress associated with the possibility of imminent death may bring on such an "experience."

Psychologists and psychiatrists are familiar with reports of OBEs, but they view them as a kind of psychological reaction to stress/conflict. Reed (1972) describes this process, which he calls "ego-splitting": "As well as feeling unnaturally calm, the subject ... feels as though he is actually *outside himself.* The sensation is one of being suspended outside one's body, at some vantage point from whence one can calmly observe and hear oneself in the third person" (p. 125).

It is interesting to note that in even everyday memory processes there is a hint of this kind of phenomenon. Imagine yourself as you sat having dinner last evening. What do you "see"? Virtually everyone visualizes a scene they have *never* perceived: a scene that includes themselves, from a vantage point outside the body. That memory, like most memories, is a construction, a partial invention. Again, think of yourself lying on the beach, and what do you "see"? Not the world around you as viewed through your own eyes, as you originally saw it, but in all likelihood you again see yourself as part of the scene.

Now suppose you have just awakened from a deep sleep and someone asks you to recall the scene in your bedroom just *before* you dozed off. Would you not again "see yourself" lying there? So it is not surprising that resuscitated patients from time to time recall having "seen" themselves. The difference, of course, is that their memories are influenced by the (possible) state of "mystic experience" that occurred at the same time.

Hypnagogic Sleep

Hypnagogic imagery is a curious phenomenon (but *not* a metaphysical

curiosity, except to those who wish to make it that) experienced by most people at one time or another in their lives during the period between wakefulness and sleep. (A similar phenomenon, labeled "hypnopompic" sleep, occurs, sometimes, between sleep and wakefulness, as a person is waking up.) It involves dreamlike fantasy, sometimes mixed with elements of reality; but unlike a normal dream, the person experiences it as "real." If you've ever been "half-awake," heard the telephone or the doorbell, got up, and realized that you were mistaken, that is a simple form of the hypnagogic (or hypnopompic) phenomenon. It's quite common. (A 1957 study cited by Reed [1972] found that 63 percent of a group of 182 students reported having had a hypnagogic experience, and a somewhat smaller number a hypnopompic one.)

Hypnagogic imagery is characterized by a relatively consistent pattern of sequential development (Schacter, 1976):

1. Colors, lights, geometric forms.
2. Vivid and detailed images of faces and objects. Unlike the reported death experiences, however, the faces are almost always those of strangers. (Yet, if one thinks that one is dying, and is preoccupied with death, it would not be surprising if the hypnagogic imagery reflected thoughts about those who have "gone before," would it?)
3. Landscapes and scenes of unusual grandeur and beauty.

Some people argue that hallucination of one's own image is very rare in hypnagogic sleep, but Foulkes and Vogel (1965) found that subjects did indeed see themselves in their imagery and that their participation increased as they moved into deeper levels of the hypnagogic state.

If hypnagogic sleep accounts for OBE experiences, as Palmer (1978) argues, and if the dying patient, possibly preoccupied by thoughts of death and of the dead, passes through a physiological state like that of hypnagogic sleep, then the reported death experiences don't appear to be extraordinary. This possibility is at least strong enough that one is surprised by the lack of concern for (or knowledge of?) they hypnagogic state shown by most survivalist writers.

Hallucinations

While we often think of hallucinations (imagery so powerful that one is certain that it is real) as having an infinite variety of themes and contents, such is apparently not the case. As far back as 1926, Kluver (cited by

Siegal, 1977), at the University of Chicago, found that mescaline-induced imagery was constructed around four constant form-types ("form constants"): (1) grating or lattice, (2) cobwebs, (3) tunnel/funnel, (4) spirals. These forms are characterized by vivid colors and intense brightness (perhaps brought about by the failure of inhibiting mechanisms in the visual system). Kluver discovered that these same form constants were typical of imagery brought about in a wide range of hallucinogenic conditions, from hypnagogic and hypnopompic sleep to delirium to dizziness to sensory deprivation. More recent experiments (Siegal, 1977) using cannabis found drug-induced imagery to have two stages. The first is characterized by Kluver's form constants, the second by more complex imagery that can incorporate the form constants but which can include memory images of familiar people and objects. One might again expect almost infinitely diverse images in the complex stages, but this wasn't the case. (Using LSD, 72 percent of subjects experienced the same form constants, and 79 percent experienced quite similar complex images. Seventy-two percent saw religious images and 49 percent saw human and animal images.) The typical imagery in the cannabis study was characterized by a bright light in the center of the field of vision: the location of the point of light created a *tunnel-like perspective* (a la Moody?). Subjects reported viewing much of their imagery in relation to the tunnel, and the other imagery seemed to move relative to the tunnel. (Subjects given placebos reported only black and white "random" form imagery.) Further studies showed that, whether the cannabis, mescaline, or LSD, after ninety minutes, most of the forms viewed were *tunnel-lattice* in nature. More complex imagery appeared usually only well after the shift to the tunnel-lattice. Common reported images involved childhood memories and scenes associated with strong emotional experiences that the person had undergone (similar to *panoramic review*?). They often reported an aerial perspective of themselves, and feelings of dissociation from the body. The imagery was also influenced by environmental stimuli. During the peak period, they asserted that the images were real.

Siegal concluded that "the experiments point to underlying mechanisms in the central nervous system as the source of a universal phenomenology of hallucinations" (p.132) and points to recent electrophysiological studies that "confirm that hallucinations are directly related to states of excitation and arousal of the central nervous system, which are

coupled with a functional disorganization of the part of the brain that regulates memorizing stimuli."

It seems, then, that there is no doubt that ordinary hallucinations can contain virtually all of the elements described by Moody, and that preoccupation with dying is likely to make more likely the notion of the separation of the soul from the body and the meeting with loved ones who have died. Again it is surprising to see virtually no references to hallucination research (apart from cursory attempts to discredit the possibility that ordinary hallucinations are involved) in the life-after-life literature. Moody (1977) agrees that sensations of being drawn down a tunnel are often reported by persons being placed under anesthesia, expecially when ether is used. But he argues that since very few of his subjects were under the influence of drugs, and since few had had any neurological problems, these experiences are not equivalent to drug-induced or other hallucinations. Again, he uses the Abbott-Costello logic—they hadn't had drugs, they had no neurological problems, therefore it was psychic. As mentioned earlier, Moody's trump card is to argue that, even if other types of hallucinations are similar to the death experiences, it is quite possible that the other hallucinations *themselves* are a manifestation of the premature release of the soul.

Hypnotic Regression

One more tool in the survivalist's armamentarium is hypnotic regression to lives past. Although you'd never know it on the basis of the literature in this area, there is considerable controversy in modern psychology about what ordinary hypnosis, not to mention regression, really does. Some argue that it puts the subject into a special state of consciousness; others argue that it leads only to a state of heightened suggestibility, where the subject and hypnotist tacitly ("unconsciously"?) collaborate to bring about the "experience" of hypnosis.

As for age-regression (even within the *current* lifetime!) there is mounting evidence that, while the subject may focus on long-dormant memories, no real "regression" (e.g., in cognitive function) actually occurs. While that is still the subject of some debate, the regression to memories of *past* lives is what's relevant for us at this point, and it goes without saying that past-life regression is not accepted as veridical by the vast majority of psychologists.

One of the most famous cases was the classic Bridey Murphy, the subject of the best-selling book *In Search of Bridey Murphy*. The story began in 1952, when a Colorado housewife by the name of Virginia Tighe (called Ruth Simmons in the book) was hypnotically "regressed" and began to describe her previous life as Bridey Murphy in Cork, Ireland. The fact that she spoke at this point in an uncharacteristic Irish brogue lent credence to her "experience." She told a very descriptive story about life and people in Ireland, even though investigators hired by the hypnotist-author, Morey Bernstein, could find no record in Ireland of a Bridey Murphy who lived in Cork (Gardner, 1957).

Dr. Ian Stevenson, a University of Virginia parapsychologist and a renowned "expert" and prolific writer on the subject, remains very impressed with the Bridey Murphy case. In fact, in an article (Stevenson, 1977) in the new *Handbook of Parapsychology*, he states that it still "has not been improved upon in the many books since written for the general public that have reported experiments with hypnotic regression" (p. 636). Yet, while Stevenson extols the merits of the Bridey Murphy case, he remains unimpressed by what others consider to be the undoing of Virginia Tighe (Gardner, 1957). In 1956, a *Chicago American* reporter visited Virginia's hometown and discovered that her background was far from being unrelated to her stories of Bridey Murphy. The reporter interviewed a Mrs. Anthony Corkell, who had lived across the street from Virginia for many years and whose Irish background and stories of Ireland apparently fascinated the young girl. Moreover, Virginia had been active in her high school drama program and had learned several Irish monologues, which she had delivered in what her former teacher referred to as a heavy Irish brogue. She even had an Irish aunt who had also entertained her with stories of Ireland. And, oh yes, about the lady across the street, Mrs. Corkell: her maiden name was Bridey Murphy! Despite this, and despite the assessment by Irish experts of her descriptions of Ireland as artificial and contrived, survivalist parapsychologists such as Stevenson reject this evidence and continue to consider this case to be a strong one, and the Bridey Murphy book is still undergoing regular reprintings.

In all likelihood, the material generated by the hypnotized subjects is a fictional blend of information and stories that they had once learned but had "forgotten." Stevenson and others naturally disagree with this interpretation. However, a study by Zolik (1958) lends credence to this view. Zolik hypnotized subjects and "regressed" them to "past lives,"

and then induced posthypnotic amnesia; and at a later time rehypnotized them and questioned them about characters and events from their earlier "past-life" accounts. He found that subjects had constructed the past-life stories from events of their own lives combined with events and people from books and plays. Surely those who were not impressed by this would at least have used Zolik's approach to examine the reports of their subjects. But no. None of this has had any effect on the confirmed survivalist. For example, Dr. Wambach, the author of a recent book on past-life regression (Wambach, 1978), has admitted to me that the reports she has gathered from hypnotized subjects who had been "regressed" to past lives do not in any way differ from those of unhypnotized subjects. She interprets this as evidence that one can have access to past-life material *without* being hypnotized.

Assessment

Each and all of the various characteristics of the "death" experience have been found to occur, alone or in a combination, in various "normal," non-death circumstances, such as those associated with emotional or physical stress, sensory deprivation, hypnagogic sleep, drug-induced hallucination, and so on. We know that the nervous system can process these experiences, even if we can't always predict when the experiences will occur. The famous "tunnel," the very bright light, the visions of others, the sense of ineffability, the out-of-body experiences, and the subsequent loss of a fear of death, etc., are, at the very least, not ***unique*** to any postmortem existence. Thus, unless one accepts either that postmortem reality mimics these earthly experiences that some people have from time to time, or that, as Moody suggests, these experiences of the living are brought about by a premature and temporary release of the soul, the reports of people who have been near death pose no demand for metaphysical interpretation.

It is clear that the "scientific," "objective" evidence for life after death is very unimpressive indeed. However, survivalist researchers are undeterred by such criticisms of their work; and it is abundantly apparent that, evidence or no evidence, they are, most of them at least, thoroughly convinced of their own immortaility. Moody admits this directly, as does Kubler-Ross (1977) when she describes death as the "peaceful transition into God's garden." I have no argument with people's theology or philosophy. What is bothersome, however, is the

necessity these people feel to try to provide "objective" evidence to support their beliefs, and their attempts to fool the layman with their claims of scientific rigor and exactitude. Survival research is based on belief in search of data rather than observation in search of explanation. It is an extension of individual and collective anxiety about death. Already such research has yielded a palliative vision of death as a grand, beautiful transition to a newer and better life. Gone are the worries about hellfire and damnation of old.

If one were to believe Moody and others, why not abandon this often frustrating earthly existence and dispatch oneself forthwith to the wonderful world beyond? Even Moody doesn't want to encourage that, and he tells us that those who have survived death report that they had the "feeling" that those on the "other side" take a dim view of those here on earth who try to speed their admission to paradise. (The early Christians had a similar problem; for they too promised a wonderful life hereafter, and many of their converts, not too well taken care of in their earthly lives, chose to go directly to the next life without delay. It is hard to build a social movement if the recruits keep killing themselves, and so suicide quickly became a heinous sin for Christians.) Despite Moody's discouragements about suicide, there are bound to be those who are enthused enough by his reports to go ahead with it anyway. I have already heard of one woman whose child was killed and, having read a book like Moody's, attempted suicide in order to rejoin her child.

At any rate, we should not, in our irritation at both those who disseminate survivalist pseudoscience and those who so quickly swallow it whole, overlook the fact that some dying people do have "mystical" experiences just as some living people do. Remember that Mesmer was uniquely successful at treating hysteria; but when the scientists branded him a fraud because they were able to prove that magnets weren't essential to his treatment (contrary to his belief that they were), he was put out of business; and as a result there was no one around who could overlook the phenomenon just because we reject the explanation. Even while seeing no reason to resort to metaphysics to explain it, we should nonetheless study it in its own right. A few medical researchers (e.g., Noyes, 1972; Noyes & Kletti, 1976) have gathered reports of near-death experiences that are quite similar to some of those described here but see no need to involve metaphysical explanations. We need more such research. It would be a pity to leave it all to the psychics.

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Television Tests of Masuaki Kiyota

Christopher Scott and Michael Hutchinson

We were asked by Granada Television to participate in tests it was to conduct in London on August 8-10, 1978, with Masuaki Kiyota, a 16-year-old Japanese who had been featured in part of an NBC-TV program on the paranormal. It is claimed that Masuaki can project mental images onto unexposed film under very tight conditions.

Granada proposed to start the tests very informally under whatever conditions the young man desired. Further tests would be progressively more difficult, first of all under the control of Professor John Hasted in a laboratory at Birkbeck College, and finally under the skeptically tight conditions of the writers. We would therefore not be required to participate until the third day. In the meantime we were kept informed of progress.

Through a change in plans, the very first day was spent in the laboratory of Professor Hasted. Whatever the protocol, the results were negative. The monotony of the day was broken by the production of what Hasted hailed as a "whitey," a term invented by American parapsychologist Jule Eisenbud. This was a photograph which, when peeled, was completely white, whereas it should have been black, as Masuaki

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The "Trafalgar Square" photo

works without operating the camera shutter. When Morris Smith, the technical representative from Polaroid, was asked for his comments, he pointed out that a light-sensitive diode—which had been used for the previous experiment—had been removed, leaving a hole through which light could pass. When the rest of the pictures from the pack were removed and peeled, they too were "whiteys," to no one's surprise.

At the start of the second day, Masuaki managed to produce a photograph of poor quality, with the foreground completely underexposed and the rest of the picture blurred. In the center was a grey "pole" which could have been Nelson's Column in London's Trafalgar Square, although it was not clear enough for anyone to be absolutely positive. A

building on the right showed up well enough to be compared with an original, if this could be identified. We later spent considerable time in and around Trafalgar Square but failed to find an angle from which the picture could have been taken. However, most people who saw the photograph initially thought that it *was* Trafalgar Square.

The second photograph, even poorer in quality, was said to show six guardsmen in file, from the right to the left. Questions were then raised as to whose camera and film had been used for these shots. It transpired that both had been given to Masuaki the previous evening and had been with him overnight. How many shots had been left on the film was not known, but "Trafalgar Square" was on frame seven and the "Guardsmen" on frame eight. While the former could have been the result of a normal shutter release exposure without pulling the photograph from the camera, the latter could not. Morris Smith stated that it was not possible to tell if the film pack has been tampered with.

The rest of the day was spent conducting tests using a camera and film supplied by Morris Smith. The location was changed from the previous day's laboratory to a room in the White House Hotel—where the first two photographs were produced—and later to the local park. Relatively tight conditions produced no results. But once more, after being allowed to have a camera and film to himself—this time for a two-hour lunch break—Masuaki achieved some success. What actually happened was later to cause a fierce argument between the interpreter on one side and the television presenter and his director on the other.

The interpreter was an Anglo-American journalist named David Tharpe, who had lived for some years in Japan. He had written at least one article about Masuaki, had been present at the young psychic's home during some successful experiments, and had been proposed by Masuaki (or his advisers) as interpreter for the London trip.

In an interview at the end of the test, Tharpe said that the most interesting photograph taken during the two and a half days was the one taken after the lunch break on the second day. He said that the camera and the film had not left his sight or that of his girlfriend, a Japanese-American who had been in London for some days. She was not part of the "official" group from Japan, which consisted of Masuaki, Tharpe, and Professor T. Miyauchi, who is an expert on "nengraphy," which is Japanese for "thoughtography." He didn't take any part in the Granada experiments.

According to Tharpe, the first two photographs were black, but the

third produced a picture. This "picture" looked like a black square partly washed out by a white circle, leaving two black corners in the shape of triangles. Tharpe said that Masuaki had asked him how to symbolize Switzerland. His answer had been, "By the Alps, or the Matterhorn," subsequently explaining that the shape of these was triangular. The photograph was therefore captioned "The Matterhorn."

The version given us by the producer on the morning of our arrival was more detailed. The session after lunch took place in the hotel room. Masuaki said he wanted to work without the film crew—there were too many observers around, he said—so the camera and lights were switched on by Gordon Burns, the program presenter. Also present were Jeremy Fox (the producer), David Tharpe, and his girlfriend. Granada suggested the use of another Polaroid camera, and a fresh film pack was loaded in front of the movie camera. But, said the producer, Masuaki wanted to use the camera that had been with him over lunch. He drew attention to this camera and the case that had held it. This was a small black case with a hinged lid, and was only just large enough for a Polaroid camera.

With both hands Masuaki placed the camera in the case and closed the lid. After several seconds, the producer told us, Masuaki took the camera from the case and produced the "Matterhorn" photograph. This was the first photograph, not the third as claimed by Tharpe, who also seems to have forgotten that, for no apparent reason, Masuaki had placed the camera in the case.

We have tried, without success, to find out what the developed movie film showed. However, the circumstances do not convince us that the photographs were evidence to prove the case for "thoughtography," for Masuaki could have operated the shutter release while placing or removing the camera from the case.

As previously mentioned, the afternoon brought no further results. Masuaki thought that he might be able to produce some photographs that evening if a small party were held in his room. This the television team arranged, and the party was held. But still Masuaki was unable to live up to his claims.

When we arrived on the third morning we were told that Masuaki had again been left with a camera and film overnight. It was confidently expected that—as on previous occasions—this would lead to an early success.

The first photograph to be peeled was black. But the second had a gray impression of the Eiffel Tower with a lamppost in the foreground

and slightly to the right of the tower. After inspection, Morris Smith again said that there was no evidence to show whether or not the film pack had been tampered with. The serial number on the photo confirmed that the film was from the batch supplied by Polaroid for the tests. This had also been the case with the other "successes."

Further tests using fresh film were not successful. After about an hour a short break was called. While few people were paying attention, Masuaki pulled a shot from the camera. On it were a number of vague light smudges running down the picture. These, it turned out, can be produced by pulling the film out of the camera in a jerky manner, as Morris Smith effectively demonstrated. Further tests using fresh film

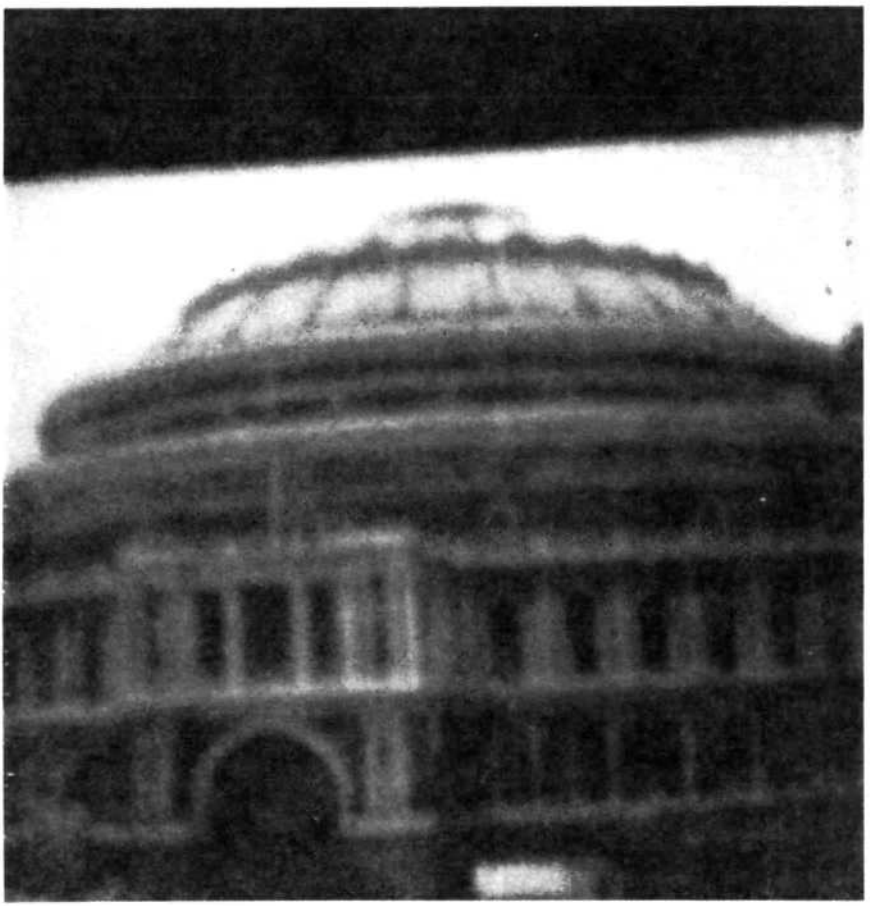

Image of Bath Cathedral exposed onto Polaroid film by Mike Hutchinson without a camera, using a color transparency and a "pinhole projector."

were not successful.

Morris Smith told us that, while in theory it is possible to take a film pack to pieces, expose each frame to the light, and reassemble it, he wasn't exactly sure how. (Obviously this is not something that Polaroid needed to do.) The main problem is that complete darkness is necessary. The film is very fast (3000 ASA, compared to around 100 ASA for normal film) and even a "safe" light used in a conventional darkroom would fog the film. He and one of the writers (M.H.) decided to take the pack to pieces and reassemble it. M.H. tried to reassemble it with his eyes closed, but found that when trying to slide the final piece on, it fouled the film, and if he continued would have folded it back. Opening his eyes, he realized that this final piece need not be slid on but could be snapped in place without difficulty.

It still remained to be discovered how an impression could be made on each frame without showing signs of tampering. We knew that the film could be folded back without showing signs that it had been. Perhaps at this stage a contact print could be made. Alternatively, it might be possible to make a crude pinhole "projector" using a slide viewer. If pointed at the folded film, a quick press on the slide illuminator might create enough light to produce a poor quality picture.

To test this theory, M.H. carried out experiments in his apartment hallway. This was the darkest place he could find. Even so, a small amount of light came through glass panels at the top of five doors. This light was just enough to see by when his eyes became dark-adapted, but did not fog the film in any noticeable way.

The front lens of the slide viewer was covered with a piece of cardboard that had a hole in it made by a small darning needle. The pack was taken to pieces and the film was unfolded. One end of the film is fixed to the pack by a staple. Taking care not to tear the film from the staple, it was folded back with one hand. The other hand pointed the "projector" toward the film at a distance of six to eight inches. An exposure of two or three seconds is all that is needed. In this way, up to eight frames can be exposed.

In M.H.'s experiment the "projector" was hand-held. While this did not cause much "shake" on the prints, it did make it difficult to expose the full frame every time. However, it would be quite simple to make a small stand that would both steady and aim the projected image correctly.

The size of the subject on the print can be varied by altering the

distance of the projected image. This means that sometimes only part of the original slide will be reproduced. The positioning of the main subject can also be altered by different angles of projection. For example, two of Masuaki's previous successes were aerial photographs of the Statue of Liberty. While the view and the shadows were identical, the Statue in one picture was in a different position of the frame.

These variations are to be expected when using a pinhole "projector." Similarly, variations of exposure also occur. Could it be that, after seeing the underexposed photographs of "Trafalgar Square" and the "Guardsmen," Masuaki decided to give a second or two extra to the "Eiffel Tower," which turned out to be overexposed?

Conclusions

Under fairly tight conditions Masuaki Kiyota was unable to fulfill his claim to project mental images onto film. The only time he achieved any success was after the film had been in his possession—and not under any control—for at least two hours.

Unfortunately, no steps were taken to ensure that the film pack could not be tampered with. In fairness to the television team, this only seems important with hindsight. Given the benefit of this report, we hope that future experimenters will either seal the pack or, preferably, prepare it in such a way that any signs of tampering would be obvious.

Finally, a few words of praise for the television team. They started the assignment believing in Masuaki and hoping for good results. Their initial enthusiasm and confidence gave way to understandable skepticism when it became evident that Masuaki couldn't perform under tight conditions as claimed. However, they didn't let this sway them in their professional approach, nor encourage them to loosen the controls. Whether the negative results will lead to a final program being broadcast remains to be seen. •

The Conversion of J. Allen Hynek

Philip J. Klass

The man who has been hailed as the "Galileo of UFOlogy," Dr. J. Allen Hynek, offered a much more modest self-appraisal in an interview published in Britain's *New Scientist* magazine on May 17, 1973. Hynek said: "When I look back on my career, I've done damn little that was original. I seem to have had the ability of seeing the value of an idea and bringing other people together to do something about it. I've never launched any new theories; I've never made any outstanding discoveries. I guess I'm not very innovative."

A remarkably candid appraisal for a scientist then only several years away from retirement as head of Northwestern University's astronomy department. A few months later, he would create his Center for UFO Studies (CUFOS), whose membership is limited to those holding a Ph.D., to give it the stature of a "National Academy of UFOria." And Hynek would soon emerge as the spiritual leader of the UFO movement, where only a decade earlier his name had been anathema to UFO proponents.

Soon Hynek's neat Vandyke-bearded face and professorial voice would be seen and heard on television network talk-shows, sometimes in connection with the massive publicity campaign used by Columbia Pictures to promote the Steven Spielberg UFO-thriller *Close Encounters of the Third Kind*, for which Hynek was the technical advisor.

This remarkable metamorphosis is summed up too briefly in his recent book, *The Hynek UFO Report* (see review in the Winter 1978

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SKEPTICAL INQUIRER), published in late 1977 concurrently with the opening of the Spielberg movie. Hynek wrote: "My transformation was gradual but by the late 1960s it was complete. Today I would not spend one further moment on the subject of UFOs if I didn't seriously feel that the UFO phenomenon is real and that efforts to investigate and understand it, and eventually to solve it, could have a profound effect—perhaps even be the springboard to a revolution in mankind's outlook on the universe."

Hynek entered the field of UFOlogy in the late 1940s, after the U.S. Air Force had created an office at Wright-Patterson AF Base in Dayton, Ohio, to investigate UFO reports. When the USAF found that many of the UFO reports resulted from sightings of Venus and other bright celestial bodies, it decided to hire an astronomer as a consultant. Hynek was teaching astronomy at nearby Ohio State University in Columbus. From 1948 to 1969 Hynek served as a consultant to the USAF's Project Blue Book office for UFO investigations.

The April 1953 *Journal of the Optical Society of America* carried a paper by Hynek on the subject of UFOs describing an incident in which a military pilot "chased a brilliant multi-colored object" that seemingly had been briefly observed on a radar scope. After investigating the incident, Hynek wrote, "It seems certain that our harried pilot was pursuing [the star] Capella." Hynek went on to say: "Unfortunately, neither Capella nor any other star can explain many other nocturnal meandering lights. But there is no question in my mind, just to make this point exceedingly clear, that there exists a relatively simple, natural explanation for them, perhaps even ordinary aircraft under special test conditions."

After more than a decade of investigating the most challenging UFO reports submitted to the USAF, Hynek summed up his views in a letter dated February 17, 1960. The letter, sent to the commander of the then newly formed Air Force Research Division, suggested that responsibility for investigating UFO reports be transferred from the USAF's Aerospace Technical Intelligence Center, in Dayton, to the new Geophysics Research Directorate, near Boston.

Hynek wrote: "I think it is amply clear by now that those relatively few sightings that are puzzling are related to upper atmosphere phenomenon and may offer interesting examples of meteorological and atmospheric optics phenomenon and, as such, be worthy of study in themselves . . . I do believe that with their staff of scientists [in geophysics research]

J. Allen Hynek in one of his television appearances

many of the reported sightings which remain 'unknown' and develop into political headaches for the Air Force ... would be quickly cleared up ..."

In late April of 1964, the USAF dispatched Hynek to Socorro, New Mexico, to investigate the report of a lone policeman that he had seen an egg-shaped UFO land on the outskirts of the town in broad daylight. There were indentations on the ground and a slightly burned bush, suggesting that a UFO had landed, which would make this one of the all-time classic cases. (The indentations also could have been made by a small shovel, and the slight burning of the bush could have been produced with a cigarette lighter.)

Hynek, after spending one day in Socorro, concluded that the incident could not possibly be a hoax, and he characterized the incident as the most impressive UFO case in the history of the phenomenon. Hynek concluded that the egg-shaped object that the policeman reported seeing must have been a secret military craft undergoing tests, and he urged that it be located, returned to Socorro, and demonstrated to the news media for the purpose, as he then phrased it, of "exploding the myth of flying saucers."

On April 5, 1966, during brief hearings held by the House Armed Services Committee, prompted by a recent rash of UFO reports, Hynek testified: "I know of no competent scientist who would say that these objects come from outer space."

During that same year, a book on UFOs, written by Hynek's close friend Jacques Vallee, was published. It contained an introduction by Hynek, in which he stated: "In my nearly two score years' association with the investigation of [UFO] reports, I have yet to write a book on the subject, primarily because *there is no physical evidence in support of the phenomenon.*" Emphasis added.

In the summer of 1966, the USAF responded to widespread criticism of its handling of the UFO controversy, and charges that it was covering up evidence on the issue, by seeking a major university to conduct an independent, unbiased investigation. Hynek, reportedly, was eager to get the job for Northwestern University, but his reputation as a skeptic ruled out his consideration.

Another scientist eager for the job was Dr. James E. McDonald, an atmospheric physicist at the University of Arizona. But McDonald was ineligible because he, too, already had taken a public position on UFOs, stating that he was convinced that they were extraterrestrial craft on reconnaissance missions.

The USAF sounded out a number of prestigious universities and found none eager for the assignment. Finally, in the fall of 1966 the University of Colorado agreed to take on the task under the direction of Dr. Edward U. Condon, a world-famed physicist who had previously headed the National Bureau of Standards.

Barely two months after the selection of the University of Colorado, Hynek authored a feature story on UFOs for the *Saturday Evening Post*, published in its December 17, 1966, issue. The article indicated that Hynek had begun to hedge his previous views. "I agree with the Air Force," Hynek wrote. "There is no incontrovertible evidence, as far as I can see, to say that we have strange visitors. But it would be foolish to rule out the possibility absolutely."

During the next two years, the University of Colorado study group became the focal point for UFO investigations, and Condon became the "UFO expert" to whom the news media turned for pronouncements on the subject, rather than Hynek, who now stood in the wings.

Simultaneously, McDonald quickly emerged as the spiritual leader of the UFO proponents, partially because of the prestige of his academic

credentials and partially because of his tireless lecture crusade around the country to drum up interest in UFOs. McDonald also quickly became the darling of the sensationalist tabloid newspapers, where he was typically characterized as "the world's leading UFO authority."

Less than a year after the Colorado effort got under way, the project was torn by dissension. Two of its scientists, who favored the extraterrestrial hypothesis, discovered a memo written before the effort began that prompted them to claim that project coordinator Robert J. Low and Condon were biased and committed to a report that would dismiss UFOs. The two scientists leaked copies of the memo to McDonald and other leaders of the UFO movement who in turn leaked the memo to the news media.

This prompted Congressman J. Edward Roush (D.-Ind.), with a keen interest in UFOs and a close relationship with McDonald, to schedule a "UFO Symposium" on July 29, 1968, under the auspices of the House Committee on Science and Astronautics, of which Roush was a member. Roush asked McDonald to select the scientists who would be invited to testify, and McDonald opted not to invite any experienced UFO-skeptics. He did invite Hynek, despite his previous reputation, and McDonald was not disappointed in Hynek's testimony: "... The cumulative weight of continued reports from groups of people around the world whose competence and sanity I have no reason to doubt, reports involving unexplainable craft, with physical effects on animals, motor vehicles, growing plants, and on the ground, has led me reluctantly to the conclusion that either there is a scientifically valuable subset of reports on the UFO phenomenon or that we have a world society containing people who are articulate, sane, and reputable in all matters save UFO reports."

The University of Colorado report, made public in early 1969, recommended that the government get out of the UFO field, offering the USAF the justification it had long wanted to close down its Project Blue Book office late that year. Now the USAF no longer needed a paid UFO consultant and Hynek was unemployed—UFOlogically speaking.

On June 15, 1971, McDonald committed suicide near his home in Tucson. The UFO movement had lost its outspoken spiritual leader and the respectability that his academic credentials offered. Hynek had comparable academic credentials, but his metamorphosis at that stage was limited to criticizing the conclusions of the Condon Report, as the Colorado study is often called.

Swann's Song and Hynek

"Psychic" Ingo Swann, who claims to have made "out-of-body" explorations of the planets Mercury and Jupiter, reported finding that Mercury had an atmosphere and a magnetic field three weeks before the National Aeronautics and Space Administration's Mariner 10 spacecraft made its fly-by of the planet. Later Swann predicted what NASA's Pioneer 10 spacecraft would find when it swept past Jupiter: a "bitter cold" atmosphere "of myriad colors" and "winds of terrific velocity," as well as "powerful magnetic forces."

Commenting on Swann's predictions and the findings of the NASA space probes, J. Allen Hynek was quoted by the *National Enquirer* (Sept. 9, 1975) as saying: "These are things that Mr. Swann couldn't have guessed or read about. His impressions of Mercury and Jupiter cannot be dismissed."

Carl Sagan, Cornell University planetary astronomer, offered a different appraisal in his book *Other Worlds* (Bantam, 1975): "Recently two courageous American mystics made an 'astral projection' trip to Jupiter, describing the nature of the planet prior to the arrival of Pioneer 10. I was asked to examine the accuracy of their account. If their reports had been submitted in my elementary astronomy course, they would have received grades of 'D'. Their reports were not better than what can be extracted from the worst popularizations of planetary astronomy...."

In the spring of 1972, Hynek's first book on UFOs, *The UFO Experience*, was published, and its general tone could be characterized as "fence-straddling" on the UFO question. For example, in referring to one of the two scientists fired by Condon for leaking the "secret memo," Hynek wrote that the scientist had "espoused the ETI [extraterrestrial intelligence] hypothesis as the central solution for which to be tested. It certainly was the most spectacular thing to go for, even though there was no real evidence that it constituted the basic problem."

In the late summer and early fall of 1973, the United States experienced a major rash of UFO reports. One of the most spectacular incidents occurred on October 11, when two shipyard workers from Pascagoula, Mississippi, reported they had been abducted by strange-looking creatures with clawlike hands, "levitated" aboard a flying saucer, and given a physical examination.

Hynek promptly flew to Pascagoula to interview the two men. At a

press conference there, Hynek made the following appraisal of the case: "There is no question in my mind that these two men have had a very terrifying experience." And on October 23, during an appearance on the NBC television network, Hynek said: "As far as I'm concerned these men had a very real, terrifying experience ... I do not think the men were perpetrating a hoax." (My own investigation led me to quite the opposite conclusion, for reasons detailed in Chapter 27 of my book *UFOs Explained.*)

By the following year, Hynek was being featured and hailed in the sensationalist tabloids, as McDonald had been a few years earlier. For example, in the July 27, 1974, edition of the *National Star*, Hynek was called the "world's foremost authority on flying saucers." The May 4, 1975, issue of the *National Tattler* termed Hynek "America's leading UFO authority." The crowning accolade came from *Oui* magazine in April, 1977, which called Hynek the "Galileo of UFO Studies." This was confirmed by *Newsweek* in its November 21, 1977, issue, which called Hynek the "Galileo of UFOlogy." Less than five years earlier Hynek's own appraisal had been: "...I've never launched any new theories; I've never made any outstanding discoveries. I guess I am not very innovative." The metamorphosis had changed all that.

As Hynek shifted from the skeptic's position toward that of the UFO enthusiast in the early 1970s, he was warmly embraced by the leaders of other UFO groups who previously had been his sharpest critics. But when Hynek began to expand the scope of his own CUFOS in 1974, and publicly accused other UFO groups of being more interested in publicity and expanding membership income than in solving the UFO question, the love affair began to cool.

In more recent years, Hynek's ambivalent stand on what he thinks UFOs might be has confused and sometimes irritated leaders of other UFO groups who have held the traditional view that UFOs are extraterrestrial spaceships. In some statements, Hynek suggests that he, too, believes that UFOs are extraterrestrial craft. But in other statements he seems more inclined to believe that intersecting universes, a science-fiction concept, are involved. In still others he suggests that UFOs somehow are related to Uri Geller's spoon-bending "powers" and other psychic phenomena.

For example, in the August 16, 1976, issue of *People* magazine, Hynek was quoted as saying: "There is so much nuts-and-bolts evidence [that UFOs are spacecraft]. How do you explain things you can see on

radar? How do you explain imprints on the ground? How do you explain something that comes along and tears off the tops of trees? ... How do you explain bullets ricocheting off whatever was in the sky?"

But in an interview published the same month in *UFO Report* magazine, Hynek was quoted as saying: "In recent times I have come to support less and less the idea that UFOs are 'nuts-and-bolts' spacecraft from other worlds. There are just too many things going against this theory ... it seems ridiculous that super intelligence would travel great distances to do relatively stupid things like stop cars, collect soil samples, and frighten people."

In the interview published in *People*, Hynek was asked for his views on "people who claim to have boarded spaceships." He responded: "Frankly, I quite strenuously avoid them. I'm almost embarrassed by the reports. None of those people have ever been able to produce anything reliable. It's junk, junk, junk!"

But in the interview published the same month in *UFO Report*, Hynek offered quite a different viewpoint: "The close encounter of the third kind ... involves humanoid occupants. Currently we have an estimated 800 sightings of this sort on file ... When I first heard of such episodes, my own natural prejudices told me to throw them out ... I've since come to believe that no scientist should discard data simply because he doesn't like it ... I had been building toward a positive attitude [toward occupant cases] when John Fuller, the well-known writer ... told me the fascinating story of Betty and Barney Hill ... My thinking was altered completely when I was called in along with Dr. [James] Harder of the University of California to interrogate two Mississippi fishermen ... who insist they were literally 'kidnapped' and forced to go aboard a spacecraft ... The tale told by these two rugged shipyard workers held up under grueling cross-examination."

In late 1977, Columbia Pictures released the highly touted *Close Encounters of the Third Kind*, its title taken from terminology that Hynek himself had coined to describe alleged encounters with UFO occupants. Concurrently, Dell published a paperback version of the movie script with an epilogue written by Hynek that offered the following appraisal of incidents featured in the film: "Thus we leave *Close Encounters of the Third Kind* ... Are these too only fantasies? Emphatically, no, if we can believe the many reports ... It will undoubtedly surprise most readers to learn that there exists a catalog of some eleven hundred cases in which a UFO occupant has been reported ..."

Despite Hynek's more than 30 years experience in investigating UFO cases, and his claim that it is relatively easy to spot hoaxes, he is not yet ready to say whether he believes that even *one* of these more than 1,100 UFO-occupant cases should be accepted as fact.

Perhaps the best characterization of Hynek's role in UFOlogy was supplied by Patrick Huyghe, an assistant editor of *US* magazine, in an article written for *New Age* magazine in the wake of the *Close Encounters* movie and Hynek's most recent book: "Regardless of the phenomenon's ultimate resolution, the name Hynek is destined to be associated with UFOs just as Darwin's name is linked to evolution, Freud's to dreams, and Nixon's to Watergate."

During the earlier cited interview with Hynek published in *New Scientist*, interviewer Ian Ridpath suggested to Hynek that he would be remembered not as an astronomer but as the man who had made UFOs "respectable." To this Hynek replied: "I wouldn't mind it." After repeating Ridpath's suggestion several times, Hynek added: "It's always nice to add one stone to the total structure of science." •

"I have no idea whether the book is true"

"It's funny. Almost nobody ever says to me, 'Hey that book of yours is a bunch of bull. I didn't believe a word of it.' Instead they ask if I think what the Lutzes told me is true. And I answer them the same way I answered you when you asked the question. I tell them that I have no idea whether the book is true or not. But I'm sure that the Lutzes believed what they told me to be true. . . .

"Yeah, I know the psychical research people say I have made mistakes. They say that on such and such a day when I said it rained, it didn't rain. So what? I'm a perfectly normal human being and sometimes I make mistakes."

—*Jay Anson, author of* The Amityville Horror, *quoted by William J. Slattery in a profile in the March 1979* Writer's Digest.

Asimov's Corollary

Isaac Asimov

In my English colleague Arthur C. Clarke's book *Profiles of the Future* (Harper & Row, 1962, rev. ed., 1972), he advances what he himself calls "Clarke's Law." It goes as follows:

> *When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong.*

Arthur goes on to explain what he means by "elderly." He says: "In physics, mathematics, and astronautics it means over thirty; in the other disciplines, senile decay is sometimes postponed to the forties."

Arthur goes on to give examples of "distinguished but elderly scientists" who have pished and tut-tutted all sorts of things that have come to pass almost immediately. The distinguished Briton Ernest Rutherford pooh-poohed the possibility of nuclear power, the distinguished American Vannevar Bush bah-humbugged intercontinental ballistic missiles, and so on.

But naturally when *I* read a paragraph like that, knowing Arthur as I do, I begin to wonder if, among all the others, he is thinking of me.

After all, I'm a scientist. I am not exactly a "distinguished" one but

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Isaac Asimov has been known to write an occasional science book. He is a Fellow of the CSICP. This essay, copyright © 1977 by Mercury Press Inc., is reprinted with permission of the author.

nonscientists have gotten the notion somewhere that I am, and I am far too polite a person to subject them to the pain of disillusionment, so I don't deny it. And then, finally, I am a little over thirty and have been a little over thirty for a long time, so I qualify as "elderly" by Arthur's definition. (So does he, by the way, for he is—ha, ha—three years older than I am.)

Well, then, as a distinguished but elderly scientist, have I been going around stating that something is impossible or, in any case, that that something bears no relationship to reality? Heavens, yes! In fact, I am rarely content to say that something is "wrong" and let it go at that. I make free use of terms and phrases like "nonsense," "claptrap," "stupid folly," "sheer idiocy," and many other bits of gentle and loving language.

Among currently popular aberrations, I have belabored without stint Velikovskianism, astrology, flying saucers, and so on.

While I haven't yet had occasion to treat these matters in detail, I also consider the views of the Swiss Erich von Däniken on "ancient astronauts" to be utter hogwash; I take a similar attitude to the widely held conviction (reported, but not to my knowledge subscribed to, by Charles Berlitz in *The Bermuda Triangle*) that the "Bermuda triangle" is the hunting ground of some alien intelligence.

Doesn't Clarke's Law make me uneasy, then? Don't I feel as though I am sure to be quoted extensively, and with derision, in some book written a century hence by some successor to Arthur?

No, I don't. Although I accept Clarke's Law and think Arthur is right in his suspicion that the forward-looking pioneers of today are the backward-yearning conservatives of tomorrow,* I have no worries about myself. I am very selective about the scientific heresies I denounce, for I am guided by what I call Asimov's Corollary to Clarke's Law. Here is Asimov's Corollary:

> *When, however, the lay public rallies round an idea that is denounced by distinguished but elderly scientists and supports that idea with great fervor and emotion—the distinguished but elderly scientists are then, after all, probably right.*

*Heck, Einstein himself found he could not accept the uncertainty principle and, in consequence, spent the last thirty years of his life as a living monument and nothing more. Physics went on without him.

But why should this be? Why should I, who am not an elitist, but an old-fashioned liberal and an egalitarian (see "Thinking About Thinking," in *The Planet That Wasn't*, Doubleday, 1976), thus proclaim the infallibility of the majority, holding it to be infallibly wrong?

The answer is that human beings have the habit (a bad one, perhaps, but an unavoidable one) of being human; which is to say that they believe in that which comforts them.

For instance, there are a great many inconveniences and disadvantages to the universe as it exists. As examples: you cannot live forever, you can't get something for nothing, you can't play with knives without cutting yourself, you can't win every time, and so on and so on (see "Knock Plastic," in *Science, Numbers, and I*, Doubleday, 1968).

Naturally, then, anything which promises to remove these inconveniences and disadvantages will be eagerly believed. The inconveniences and disadvantages remain, of course, but what of that?

To take the greatest, most universal, and most unavoidable inconvenience, consider death. Tell people that death does not exist and they will believe you and sob with gratitude at the good news. Take a census and find out how many human beings believe in life after death, in heaven, in the doctrines of spiritualism, in the transmigration of souls. I am quite confident you will find a healthy majority, even an overwhelming one, in favor of side-stepping death by believing in its nonexistence through one strategy or another.

Yet as far as I know, there is not one piece of evidence ever advanced that would offer any hope that death is anything other than the permanent dissolution of the personality and that beyond it, as far as individual consciousness is concerned, there is nothing.

If you want to argue the point, present the evidence. I must warn you, though, that there are some arguments I won't accept.

I won't accept any argument from authority. ("The Bible says so.")

I won't accept any argument from internal conviction. ("I have faith it's so.")

I won't accept any argument from personal abuse. ("What are you, an atheist?")

I won't accept any argument from irrelevance. ("Do you think you have been put on this Earth just to exist for a moment of time?")

I won't accept any argument from anecdote. ("My cousin has a friend who went to a medium and talked to her dead husband.")

And when all that (and other varieties of nonevidence) are elimi-

nated, there turns out to be nothing.*

Then why do people believe? Because they want to. Because the mass desire to believe creates a social pressure that is difficult (and, in most times and places, dangerous) to face down. Because few people have had the chance of being educated into the understanding of what is meant by evidence or into the techniques of arguing rationally.

But mostly because they want to. And that is why a manufacturer of toothpaste finds it insufficient to tell you that it will clean your teeth almost as well as the bare brush will. Instead he makes it clear to you, more or less by indirection, that his particular brand will get you a very desirable sex partner. People, wanting sex somewhat more intensely than they want clean teeth, will be the readier to believe.

Then, too, people generally love to believe the dramatic, and incredibility is no bar to the belief but is, rather, a positive help.

Surely we all know this in an age when whole nations can be made to believe in any particular bit of foolishness that suits their rulers and can be made willing to die for it, too. (This age differs from previous ages in this, however, only in that the improvement of communications makes it possible to spread folly with much greater speed and efficiency.)

Considering their love of the dramatic, is it any surprise that millions are willing to believe, on mere say-so and nothing more, that alien spaceships are buzzing around the earth and that there is a vast conspiracy of silence on the part of the government and scientists to hide that fact? No one has ever explained what government and scientists hope to gain by such a conspiracy or how it can be maintained, when every other secret is exposed at once in all its details—but what of that? People are always willing to believe in any conspiracy on any subject.

People are also willing and eager to believe in such dramatic matters as the supposed ability to carry on intelligent conversations with plants, the supposed mysterious force that is gobbling up ships and planes in a particular part of the ocean, the supposed penchant of Earth and Mars to play Ping-Pong with Venus and the supposed accurate description of the result in the Book of Exodus, the supposed excitement of visits from extraterrestrial astronauts in prehistoric times and their donation to us of our arts, techniques, and even some of our genes.

To make matters still more exciting, people like to *feel* themselves to

*Lately, there have been detailed reports about what people are supposed to have seen during "clinical death." I don't believe a word of it.

be rebels against some powerful repressive force—as long as they are sure it is quite safe. To rebel against a powerful political, economic, religious, or social establishment is very dangerous and very few people dare do it, except, sometimes, as an anonymous part of a mob. To rebel against the "scientific establishment," however, is the easiest thing in the world, and anyone can do it and feel enormously brave, without risking as much as a hangnail.*

Thus, the vast majority, who believe in astrology and think that the planets have nothing better to do than form a code that will tell them whether tomorrow is a good day to close a business deal or not, become all the more excited and enthusiastic about the bilge when a group of astronomers denounce it.

Again, when a few astronomers denounced the Russian-born American Immanuel Velikovsky, they lent the man (and, by reflection, his followers) an aura of the martyr, which he (and they) assiduously cultivate, though no martyr in the world has ever been harmed so little or helped so much by the denunciations.

I used to think, indeed, that it was entirely the scientific denunciations that had put Velikovsky over the top and that, had the American astronomer Harlow Shapley only had the *sang froid* to ignore the Velikovskian folly, it would quickly have died a natural death.

I no longer think so. I now have greater faith in the bottomless bag of credulity that human beings carry on their back. After all, consider von Däniken and his ancient astronauts. Von Däniken's books are even less sensible than Velikovsky's and are written far more poorly,† and yet he does well. What's more, no scientist, as far as I know, has deigned to take notice of von Däniken. Perhaps they felt such notice would do him too much honor and would but do for him what it had done for Velikovsky.

So von Däniken has been ignored—and, despite that, is even *more* successful than Velikovsky is, attracts more interest, and makes more

*A reader once wrote me to say that the scientific establishment could keep you from getting grants, promotions, and prestige, could destroy your career, and so on. That's true enough. Of course, that's not as bad as burning you at the stake or throwing you into a concentration camp, which is what a *real* establishment could and would do, but even depriving you of an appointment is rotten. However, that works only if you are a scientist. If you are a nonscientist, the scientific establishment can do nothing more than make faces at you.

†Velikovsky, to do him justice, is a fascinating writer and has an aura of scholarliness that von Däniken utterly lacks.

money.

You see, then, how I choose my "impossibles." I decide that certain heresies are ridiculous and unworthy of any credit, not so much because the world of science says, "It is not so!" but because the world of non-science says, "It is," so enthusiastically. It is not so much that I have confidence in scientists' being right, but that I have so much in nonscientists' being wrong.

I admit, by the way, that my confidence in scientists' being right is somewhat weak. Scientists have been wrong, even egregiously wrong, many times. There have been heretics who have flouted the scientific establishment and have been persecuted therefor (as far as the scientific establishment is able to persecute), and, in the end, it has been the heretic who has proved right. This has happened not only once, I repeat, but many times.

Yet that doesn't shake the confidence with which I denounce those heresies I do denounce, for in the cases in which heretics have won out, the public has, almost always, not been involved.

When something new in science is introduced, when it shakes the structure, when it must in the end be accepted, it is usually something that excites scientists, sure enough, but does not excite the general public—except perhaps to get them to yell for the blood of the heretic.

Consider Galileo, to begin with, since he is the patron saint (poor man!) of all self-pitying crackpots. To be sure, he was not persecuted primarily by scientists for his scientific "errors" but by theologians for his very real heresies (and they were real enough by seventeenth-century standards).

Well, do you suppose the general public supported Galileo? Of course not. There was no outcry in his favor. There was no great movement in favor of the earth going round the sun. There were no "sun-is-center" movements denouncing the authorities and accusing them of a conspiracy to hide the truth. If Galileo had been burned at the stake, as Giordano Bruno had been a generation earlier, the action would probably have proved popular with those parts of the public that took the pains to notice it in the first place.

Or consider the most astonishing case of scientific heresy since Galileo—the matter of the English naturalist Charles Robert Darwin. Darwin collected the evidence in favor of the evolution of species by natural selection and did it carefully and painstakingly over the decades,

then published a meticulously reasoned book that established the fact of evolution to the point where no rational biologist can deny it* even though there are arguments over the details of the mechanism.

Well, then, do you suppose the general public came to the support of Darwin and his dramatic theory? They certainly knew about it. His theory made as much of a splash in his day as Velikovsky did a century later. It was certainly dramatic—imagine species developing by sheer random mutation and selection, and human beings developing from apelike creatures! Nothing any science-fiction writer ever dreamed up was as shatteringly astonishing as that to people who from earliest childhood had taken it for established and absolute truth that God had created all the species ready-made in the space of a few days and that man in particular was created in the divine image.

Do you suppose the general public supported Darwin and waxed enthusiastic about him and made him rich and renowned and denounced the scientific establishment for persecuting him? You know they didn't. What support Darwin did get was from scientists. (The support any rational scientific heretic gets is from scientists, though usually from only a minority of them at first.)

In fact, not only was the general public against Darwin then, they are against Darwin now. It is my suspicion that, if a vote were taken in the United States right now on the question of whether man was created all at once out of the dirt or through the subtle mechanisms of mutation and natural selection over millions of years, there would be a large majority who would vote for the dirt.

There are other cases, less famous, where the general public didn't join the persecutors only because they never heard there was an argument.

In the 1830s the greatest chemist alive was the Swede Jöns Jakob Berzelius. Berzelius had a theory of the structure of organic compounds which was based on the evidence available at that time. The French chemist August Laurent collected additional evidence that showed that Berzelius' theory was inadequate. He himself suggested an alternate theory of his own which was more nearly correct and which, in its essentials, is still in force now.

Berzelius, who was in his old age and very conservative, was unable

*Please don't write to tell me that there are creationists who call themselves biologists. Anyone can call himself a biologist.

to accept the new theory. He retaliated furiously, and none of the established chemists of the day had the nerve to stand up against the great Swede.

Laurent stuck to his guns and continued to accumulate evidence. For this he was rewarded by being barred from the more famous laboratories and being forced to remain in the provinces. He is supposed to have contracted tuberculosis as a result of working in poorly heated laboratories, and he died in 1853 at the age of forty-six.

With both Laurent and Berzelius dead, Laurent's new theory began to gain ground. In fact, one French chemist who had originally supported Laurent but had backed away in the face of Berzelius' displeasure now accepted it again and actually tried to make it appear that it was *his* theory. (Scientists are human, too.)

That's not even a record for sadness. The German physicist Julius Robert Mayer, for his championship of the law of conservation of energy in the 1840s, was driven to madness. Ludwig Boltzmann, the Austrian physicist, for his work on the kinetic theory of gases in the late nineteenth century, was driven to suicide. The work of both is now accepted and praised beyond measure.

But what did the public have to do with all these cases? Why, nothing. They never heard of them. They never cared. It didn't touch any of their great concerns. In fact, if I wanted to be completely cynical, I would say that the heretics were in this case right and that the public, somehow sensing this, yawned.

This sort of thing goes on in the twentieth century, too. In 1912 a German geologist, Alfred Lothar Wegener, presented to the world his views on continental drift. He thought the continents all formed a single lump of land to begin with and that this lump, which he called "Pangaea," had split up and that the various portions had drifted apart. He suggested that the land floated on the soft, semisolid underlying rock and that the continental pieces drifted apart as they floated.

Unfortunately, the evidence seemed to suggest that the underlying rock was far too stiff for continents to drift through, and Wegener's notions were dismissed and even hooted at. For half a century the few people who supported Wegener's notions had difficulty in getting academic appointments.

Then, after World War II, new techniques of exploration of the sea bottom uncovered the global rift, the phenomenon of sea-floor spreading, the existence of crustal plates, and it became obvious that the earth's

crust *was* a group of large pieces that were constantly on the move and that the continents were carried with the pieces. Continental drift, or "plate tectonics," as it is more properly called, became the cornerstone of geology.

I personally witnessed this turnabout. In the first two editions of my *Guide to Science* (Basic Books, 1960, 1965), I mentioned continental drift but dismissed it haughtily in a paragraph. In the third edition (1972) I devoted several pages to it and admitted having been wrong to dismiss it so readily. (This is no disgrace, actually. If you follow the evidence you *must* change as additional evidence arrives and invalidates earlier conclusions. It is those who support ideas for emotional reasons only who can't change. Additional evidence has no effect on emotion.)

If Wegener had not been a true scientist, he could have made himself famous and wealthy. All he had to do was to take the concept of continental drift and bring it down to earth by having it explain the miracles of the Bible. The splitting of Pangaea might have been the cause, or the result, of Noah's Flood. The formation of the Great African Rift might have drowned Sodom. The Israelites crossed the Red Sea because it was only half a mile wide in those days. If he had said all that, the book would have been eaten up and he could have retired on his royalties.

In fact, if any reader wants to do this *now*, he can still get rich. Anyone pointing out this article as the inspirer of the book will be disregarded by the mass of "true believers," I assure you.

So here's a new version of Asimov's Corollary, which you can use as your guide in deciding what to believe and what to dismiss:

> *If a scientific heresy is ignored or denounced by the general public, there is a chance it may be right. If a scientific heresy is emotionally supported by the general public, it is almost certainly wrong.*

You'll notice that in my two versions of Asimov's Corollary I was careful to hedge a bit. In the first I say that scientists are "probably right." In the second I say that the public is "almost certainly wrong." I am not absolute. I hint at exceptions.

Alas, not only are people human; not only are scientists human; but I'm human, too. I want the universe to be as *I* want it to be and that means completely logical. I want silly, emotional judgments to be *always* wrong.

Unfortunately, I can't have the universe the way I want it, and one of the things that makes me a rational being is that I know this.

Somewhere in history there are bound to be cases in which science said "No" and the general public, for utterly emotional reasons, said "Yes" and in which it was the general public that was right. I thought about it and came up with an example in half a minute.

In 1798 the English physician Edward Jenner, guided by old wives' tales based on the kind of anecdotal evidence I despise, tested to see whether the mild disease of cowpox did indeed confer immunity upon humans from the deadly and dreaded disease of smallpox. (He wasn't content with the anecdotal evidence, you understand; he *experimented.*) Jenner found the old wives were correct and he established the technique of vaccination.

The medical establishment of the day reacted to the new technique with the greatest suspicion. Had it been left to them, the technique might well have been buried.

However, popular acceptance of vaccination was immediate and overwhelming. The technique spread to all parts of Europe. The British royal family was vaccinated; the British Parliament voted Jenner ten thousand pounds. In fact, Jenner was given semidivine status.

There's no problem in seeing why. Smallpox was an unbelievably frightening disease, for when it did not kill, it permanently disfigured. The general public therefore was almost hysterical with desire for the truth of the suggestion that the disease could be avoided by the mere prick of a needle.

And in this case, the public was right! The universe *was* as they wanted it to be. In eighteen months after the introduction of vaccination, for instance, the number of deaths from smallpox in England was reduced to one-third of what it had been.

So there are indeed exceptions. The popular fancy is sometimes right.

But not often, and I must warn you that I lose no sleep over the possibility that any of the popular enthusiasms of today are liable to turn out to be scientifically correct. Not an hour of sleep do I lose; not a minute.

Book Reviews

The Lunar Effect: Biological Tides and Human Emotions. By Arnold L. Lieber, M.D. Anchor Press/Doubleday, New York, 1978. 168 pp. $7.95.

Reviewed by George O. Abell

The cycle of phases of the moon, and full moon in particular, are associated with a plethora of folklore, ranging from lycanthropy (werewolfism) to the frequency of human births. Certainly there are real effects of the moon—tides and eclipses, for example—and it is entirely possible that some lunar influences exist that have not yet been recognized by the scientific community.

One person who believes this to be the case is Arnold Lieber, a Miami psychiatrist who has recently described his ideas in *The Lunar Effect*, prepared in collaboration with writer Jerome Agel, who is listed as "producer."

Lieber, noting what he regards to be especially anomalous activity of many mental patients during the time of full moon, theorizes that the moon's gravitational pull produces "biological tides" in man and other organisms. The human body is 80 percent water, he reminds us, so that erratic behavior may result from tidal action on bodily fluids analogous to the action of the moon on the oceans of the earth. If so, he argues that the effect should be most pronounced at the time of full and new moon, when ocean tides are highest.

To test his theory, Lieber, and an associate, Carolyn Sherin, investigated the incidence of violent crime. In a sample of 1,892 homicides over a 15-year period in Dade County (Miami), they found a peak in the number occurring on the day of full moon, and another peak two days after new moon. In a second sample of 2,008 homicides over a 13-year period in Cuyahoga County (Cleveland) they found one peak three days after full moon and another two days after new moon. Lieber suspected that the time displacement between the peaks in the two samples might be due to a phase lag associated with latitude.

Other investigators, in particular Alex Pokorny, professor of psychiatry at Baylor College of Medicine, have been unable to replicate Lieber's finding of a peak in the number of homicides at full or new moon in investigations of several independent samples. Lieber argues, however, that the studies of Pokorny and others consider only the time of death, while his own statistics are based on the

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time of initial injury. To verify this point, Lieber reexamined the homicides in Dade and Cuyahoga counties but used time of death rather than assault, and he combined these data with a much larger sample of 10,000 homicides in New York City, which listed only death times. He found these death times to have no correlation with lunar phase.

Encouraged by his findings, in late summer 1973 Lieber predicted that "an increase in accidents of all kinds" and "an increase in the number of homicides" would occur in January and February of 1974, when the "Earth, the Moon, and the Sun would be in a straight line . . . with the Moon at perigee unusually close to Earth" (pages 41-42). He reports, "The murder toll for the first three weeks of the new year was three times higher than for all of January 1973," and he describes several violent events over the world that occurred during "this time of cosmic coincidence." He points out, further, that deaths in Dade County, psychiatric emergency-room visits, and admissions to the psychiatric institute at Jackson Memorial Hospital were all unusually high during the first three months of 1974.

Needless to say, astrologers are delighted with the appearance of Lieber's book, not because it confirms predictions of traditional astrology, but because it argues for cosmic influences, which, at least to astrologers, makes their doctrine seem more credible. And on the face of it, Lieber's mass of evidence and statistics seems very impressive indeed. It is, therefore, worth a second look.

Lieber believes the key to lunar influences is found in the tides the moon produces on biological organisms. Tides are gravitational phenomena, and gravitation is an attraction between all material bodies. That attraction is strongest for bodies close together, but drops off rapidly the greater their separation. Now the reason the moon produces tides is that, as astronomical bodies go, it is relatively close to the earth, so that its pull on the side of the earth nearest it is slightly stronger than on the side of the earth farthest from it. The result is that the moon tries to distort the earth, stretching it into a "football" shape, with the long dimension pointing toward the moon. The solid earth actually does distort in this way, but only by about 20 centimeters. (At the same time, the earth, similarly, distorts the moon.)

This small tidal distortion of the rigid earth is not great enough to bring the forces on it into equilibrium; consequently, the water on the surface tries to flow in such a way as to pile up both under the moon and on the far side of the earth from the moon. The earth is rotating with respect to the moon, however, so that the directions of the tide-raising forces on the oceans reverse twice each day—far too rapidly for the water to have time to flow significantly over the surface of the earth. But these forces, switching back and forth as they do, set the oceans sloshing back and forth in their basins, so that at most places along the shores the tides do "come in and go out" twice each day.

The heights of the tides produced by the moon have nothing to do with its phase (whether it is new, full, or whatever), but they do depend on the moon's distance. Its orbit is eccentric so its distance varies, and once each month (actually 27.55 days) it is 10 percent closer to us than it is two weeks later. At those monthly times of the moon's nearest approach (perigee) the tides produced

are more than 30 percent higher than when the moon is at its farthest (apogee)

The sun also produces tides, but the sun is 400 times as far away as the moon is, so even though its total gravitational pull on the earth is more than 100 times that of the moon, the *difference* of its pull on different sides of the earth—that is, its tidal force—has less than half the effect of the moon. Still, when the sun, earth, and moon are in a line, as they are every two weeks (at either full or new moon), their tidal forces combine and produce higher than average tides (spring tides), while when they are at right angles to each other in the sky (first or third quarter) their tides partly cancel each other (neap tides). Thus it is not that the moon's gravitational pull is stronger at new and full moon (as Lieber states), but that its tidal force joins that of the sun. This is why Lieber attaches significance to the full and new moon, although the difference between spring and neap tides is not dramatic; in fact, it is comparable to the effect of the moon's changing distance from the earth.

Even so, the effect of the moon on the oceans is important only because the tidal force acts over the 8,000-mile diameter of the earth. What effect has the moon on a man or woman? The earth's pull on a person is called his *weight*. On the average the moon's gravitational pull amounts to only three parts in a million of one's weight; for a 200-pound man, this is about 0.01 ounce. But the moon's pull on you isn't even relevant, because it also pulls on the earth. What might matter is the difference between your weight in the presence of the moon's gravitational effect and what it would be if there were no moon. At the most, that difference amounts to only 0.01 gram, or about 0.0003 ounces, less than the effect of a mosquito on your shoulder.

But even the moon's effect on your weight is not what *really* counts. If there is anything to the idea of biological tides, it is due to the difference of the moon's pull on different parts of your body, which is pretty small compared to the 8,000-mile diameter of the earth. It works out that the effect on your blood (or any fluid in your body whose flow or circulation could be distorted by the moon) is about one part in 3×10^{13} (or 30 trillion) of the weight of that fluid. The copy of the SKEPTICAL INQUIRER now in your hand exerts a tidal force on your body that is tens of thousands of times stronger than that of the moon.

In short, we would not expect tides by the moon to have a significant effect on human behavior, and would, I should think, be very surprised to find a lunar influence of the sort Lieber proposes. On the other hand, if he presents convincing evidence for a lunar effect, we should certainly take a strong interest, for such an effect, if real, could signal new science. So how convincing is Lieber's case?

First, I find it strange that Lieber implies (p. 16) that the effect is obvious and that nearly everyone is aware that, for example, people in mental institutions act strangely at full moon, but then (p. 18) says that it is a small effect that requires large samples to reveal. Still, what about those large samples?

Lieber does not give the actual numbers of homicides in his Dade County and Cuyahoga County samples, either by calendar date or by date in the lunar cycle; he only shows a graph of the data. Therefore, I looked up his and Sherin's original paper (*American Journal of Psychiatry,* 129:69-74, 1972) and read the numbers off their plots as well as I could. A simple χ^2 test showed that the

distribution of Dade County homicides through the lunar cycle did not differ from what one would expect by chance at least 7 percent of the time, and that the actual day-to-day fluctuations are quite in line with chance. Although there was a peak at full moon, I would judge the peak as typical of random noise. And the second peak in the lunar cycle was not at new moon, as predicted, but two days later.

Now, Lieber (in his and Sherin's paper) points out that if one asks the probability of obtaining peaks within one (or two) days of the times of the observed peaks, that probability is low. But this is a fallacious way to test a matter statistically. Every random distribution has random fluctuations. One cannot simply pick out the high noise peaks and ask what is the probability of finding them exactly where they occurred; it is already *known* that there are peaks at those places. It is like drawing a card from a deck, noting that it is the four of hearts, and arguing that the chance was only one in 52 of drawing that particular card; although true, it is exactly the same as the probability of drawing any other card named in advance, and of course does not indicate anything remarkable about the deck or drawing. Lieber could have made the case seem all the more remarkable by noting that there were 1,892 homicides in Dade County during the 480 million seconds (15 years) of the period sampled, and that the chance of a homicide occurring during the particular second that, say, homicide number 87 occurred is only 1,892 divided by 480 million, or about one in 200,000. Of course each homicide had to occur during *some* second. One cannot test the chance occurrence of an event already known to have occurred; what he is doing is calculating the probability of the identical thing happening again in a given random trial. In short, I find the Dade homicide data typical of noise, and unconvincing.

I am also not convinced by Lieber's explanation of why Pokorny failed to replicate his results. According to Pokorny, 85 percent of homicide victims die within one hour of injury, but Lieber contends that the 15 percent who die later would destroy the subtle correlation he finds. On the other hand in the New York City sample of 10,000 homicides one would expect that surely the 85 percent who die at once would show some correlation with full or new moon if the lunar effect were real.

How about the Cuyahoga sample? There, too, the day-to-day fluctuations of numbers of homicides within the lunar cycle are within what is expected by chance. The actual distribution of events is somewhat unusual; it differs from what is expected by chance more often than occurs only 3 percent of the time. Still, that is not overly surprising. And more to the point, the Cuyahoga sample has a very different distribution from that of Dade County. There are three peaks in the Cuyahoga County sample, the second highest being near third quarter moon, and the third highest is the one two days after new moon. Moreover, the peak near full moon lagged three days behind the peak in the Dade County sample, while the one near new moon had no lag at all. Lieber seems to be changing the rules for what constitutes agreement.

Now every year tens of thousands of reports of experiments and observations are published. Some are sound, but many are based on poor experimental

techniques, on improper controls, on biased or selected data, and sometimes are even fudged. It is not an uncommon practice for those with novel theories to comb the scientific literature for results that seem to support their theses. There is an old adage, "If ye seek hard enough, ye shall probably find." Among the many thousands of accounts to choose from, it is indeed not rare to find two or three that will serve a cause.

Lieber found what he needed in the studies of the metabolic activity of hamsters by Northwestern University biologist Frank Brown. Brown is himself somewhat of a maverick. He has been studying rhythms of various kinds in living organisms. Brown holds that these rhythms are externally stimulated—say by the sun or moon—whereas most of his colleagues are of the opinion that, while natural selection may have favored evolution of rhythms that are in step with environmental cycles, the actual timing is controlled by internal clocks in the organisms. An example is the familiar jet lag that most of us feel after an air trip from Europe to the United States; for several days our internal clocks keep waking us in the wee hours until we manage to get those clocks reset to our workaday cycle.

The activity Brown measured in his hamsters roughly matched, in lunar-phase cycle, the Cuyahoga County fluctuations in homicide rate. I measured the correlation between the two and found the coefficient to be a significant 0.5; but remember that the hamster study was selected because it did resemble the Cuyahoga murder data. It hardly provides convincing proof of the totally unexpected theory of biological tides.

Lieber's attempt to make a case out of violent activity in Miami in early 1974 involves a misunderstanding of elementary astronomy. When new or full moon occurs while the moon is also at its nearest (perigee), the spring tides are especially high. The moon was indeed near perigee at the full moons occurring on January 8, February 6, and March 8, 1974, and the corresponding spring tides were large ones. However, these high tides occur only for a few days; the moon was actually at its farthest (apogee) during the spring tides corresponding to new moon on January 23, February 22, and March 23, so those tides were below average for spring tides. During a 27.55-day period the moon goes through all of its possible distances.

Lieber reports (pp. 42-43) that "all hell broke loose, especially during the first two weeks of January, with the moon rocking only 217,000 miles from Earth." (Actually, during that period the moon's distance from the center of the earth varied from 221,564 miles to 246,085 miles.) Lieber then describes nine murders that occurred in that period in Miami—but without giving the dates, and he mentions some isolated acts of violence elsewhere in the world.

To support his theory, Lieber would have to demonstrate that violence in all parts of the world was significantly increased, not just during a two- or three-week period but within a day or two of those full moons when the moon was near perigee. Meanwhile, violence should have been lower than typical during the intervening new moons, when the moon was at apogee.

In Chapters 3 through 8 of *The Lunar Effect* Lieber describes a host of phenomena allegedly or possibly associated with the moon, including Harry

Rounds's study of blood factors in cockroaches (blood in cockroaches?), the human menstrual cycle, birthrates, geophysical effects, "wolfish" tendencies in man, and even disappearances in the Bermuda Triangle.

I am highly skeptical of even the human menstrual cycle having anything to do with the moon, despite widespread opinion to the contrary (and on page 52 of *The Lunar Effect*). The moon's cycle of phases is 29.53 days, while the human female menstrual cycle averages 28 days (although it varies among women and from time to time with individual women); this is hardly even a good coincidence! The corresponding estrous cycles of some other mammals are 28 days for opossums, 11 days for guinea pigs, 16 to 17 days for sheep, 20 to 22 days for sows, 21 days for cows and mares, 24 to 26 days for macaque monkeys, 37 days for chimpanzees, and only 5 days for rats and mice. One could argue, I suppose, that the human female, being more intelligent and perhaps more aware of her environment, adapted to a cycle close to that of the moon, while lower animals did not. But then the 28-day period for the opossum must be a coincidence, and if it is a coincidence for opossums, why not for humans?

Lieber accuses science of having prejudice against a lunar effect. I cannot imagine why such a prejudice should exist; scientists I know would be overjoyed to find a significant new correlation and to achieve some professional acclaim for their discovery. I think most of us are quite open-minded about the possibility of undiscovered lunar influences—especially psychological ones. But scientists do tend to be prejudiced against faulty statistical treatments, teleological reasoning, biased selection of data, and the adoption of farfetched arguments at the expense of far simpler ones to explain phenomena.

My impression is that Arnold Lieber is sincere in his attempt to investigate what seem to him to be interesting effects, and I do not regard *The Lunar Effect* as pseudoscience in the usual sense. But it is certainly very bad science. •

Ripley's Believe It or Not: Stars Space UFOs. Pocket Books, New York, 1978. 192 pp. $1.75.

Reviewed by Robert Sheaffer

Encountering "Ripley's Believe It or Not" each week in the funny papers, I had never been sure how reliable most of the material happened to be. Things on the order of: a monk grows a beard eighteen feet wide; a professor learns to read 37 languages backward and teaches at the same school for 75 years; a house is built entirely of popsicle sticks found at the bottom of the Grand Canyon. Not impossible, though certainly out of the ordinary. How factual, I sometimes wondered, is Ripley's material?

If the rest of Ripleydom can be judged by the latest in the series, *Stars Space UFOs*, then we may safely conclude that the Ripley genre has earned its place in the funny papers next to Donald Duck. The book appears to have been assembled in tremendous haste from questionable sources, with no effort being made to verify anything. Several items were taken directly from the tabloid sizzler *National Enquirer* and sensationalized even further, if such a thing is possible.

"Several bizarre events *terrified* the cast and crew of *Close Encounters* while the film was being made ... Many cast members think that some *force* did *not* want the film to be made!" The source of this item was obviously the story in the *National Enquirer* of December 20, 1977, "Occult Experiences Terrify Cast of Spectacular New UFO Movie." Unfortunately, it never happened. Bob Balaban, who in the movie played the role of the bearded translator Laughlin, joined me on a recent TV talk show in New York City. When I asked him about the matter afterward, he laughed and asked if I meant that *National Enquirer* story. I did. It was 100 percent fiction, he emphatically stated.

"Astronauts Neil Armstrong and James McDivitt both saw UFOs while on space missions. But NASA ... according to newscaster Walter Cronkite ... *is keeping the evidence a secret!*" (Ellipsis in original.) This is another reference to a *National Enquirer* story, from December 14, 1976, in which Walter Cronkite apparently chose, for reasons unknown, to break the "Story of the Century" to the *Enquirer* instead of on the CBS Evening News. The only trouble is, Cronkite denies ever having said any such thing. "Since the article is false in all these particulars, it does not accurately portray Mr. Cronkite's view on the so-called flying saucers," his office stated.

Even the "straight" astronomy in the book is often grossly inaccurate. "Every star possesses a system of planets." If that statement can be substantiated, it's worth a Nobel Prize. "[Astronomer Edwin Hubble] found that by comparing the brightness of stars he could compute their distance." That is an astonishing misstatement of Hubble's discovery of the relationship between the distance of a galaxy and the speed at which it is drawing away from the earth as the universe expands. Stars are confused with quasars, refracting telescopes with

Robert Sheaffer is a computer-systems analyst and science writer. He is a member of the CSICP's UFO Subcommittee.

reflecting ones, and NASA's Space Shuttle is proclaimed to be capable of interplanetary flight. Seldom have so many errors been crammed into so few sentences.

Many thousands of copies of *Stars Space UFOs* are now in print, and they are sprouting up like mushrooms at newsstands, drugstores, and supermarkets across America. The profits to be made by peddling such baloney at $6.83 a pound must truly be enormous. (The book weighs just over four ounces. If you see it in your supermarket, sausages are a much better buy.)

"The Great Lakes Triangle Is More Deadly Than the Bermuda Triangle" ... "Creature from Outer Space is Captured" ... "Authorities Now Believe That UFOs Have Landed on Earth and Aliens Are *Living Among Us!*" The person who takes seriously wild claims like these is not likely to be reading this magazine. Yet this book is not to be ignored. It will continue to surface as a source of misinformation for years to come, breathing new life into old fantasies. It stands as testimony that the public is seeking, not *answers* about UFOs, but excitement. And *that* fact helps us understand why there is so little critical thinking to be found anywhere in the pro-UFO camp. •

Unexplained cases aren't evidence

The basic difficulty inherent in any investigation of phenomena such as those of psychic research or of UFOs is that it is impossible for science ever to prove a universal negative. There will be cases which remain unexplained because of lack of data, lack of repeatability, false reporting, wishful thinking, deluded observers, rumors, lies, and fraud. A residue of unexplained cases is not a justification for continuing an investigation after overwhelming evidence has disposed of hypotheses of supernormality, such as beings from outer space or communications from the dead. Unexplained cases are simply unexplained. They can never constitute evidence for any hypothesis.

—Hudson Hoagland, *Science* 163 (1969):625

From Our Readers

A falsehood

The letter from Michael Cohen, published in the Fall 1978 issue of the SKEPTICAL INQUIRER, contains a malicious falsehood which the writer knows to be spurious. He refers to articles which he claims I wrote, "in back issues of *Aviation Week*, especially those from 1965 to 1975, which decribe how America's 'air superiority' was winning the Vietnam War."

Michael Cohen made a similar charge in a letter published in the February 1976 issue of *Fate* magazine in which he wrote: "Mr. Klass's ability to see and judge reality is reflected in... back issues of Aviation Week [which] reveal that Mr. Klass was living in a fantasy world when he claimed that multimillion-dollar jet bombers and helicopters were defeating jungle guerrillas [in Vietnam]."

I wrote to *Fate* magazine, with a copy to Cohen, on January 26, 1976, challenging "him to find *any* articles that I have written that substantiate his claim. For each and every one he can find, I will send a check for $25 to his favorite charity—or to him, if he prefers."

He responded on February 19 with a list of 44 articles that had appeared in *Aviation Week & Space Technology* magazine. Only 27 of the 44 were written by me, and of these 27, there was *no mention* of the war in Vietnam or Southeast Asia in 24 of the articles, leaving only three articles in which that conflict was even mentioned! Nothing in these three articles substantiated his charge.

I pointed this out to Michael Cohen in my letter of February 19, and said that, after reading the three articles in which the Vietnam war was mentioned, I would like to double my original offer and pay him $50 for every article he could cite that might substantiate his claim. I urged him to send photocopies of these articles to the editor of *Fate*, marking those portions that he believed would substantiate his published allegation.

To the best of my knowledge, Cohen never made such a submission, despite my letter of June 7, 1976, prodding him to do so.

Now, two years later, he once again publishes his spurious allegations.

Philip J. Klass
Washington, D.C.

Mercenary publishers: Another view

In his letter published in the Fall 1978 issue, Dr. Ernest H. Taves is critical of the mercenary behavior of book publishers who are reluctant to finance debunking books because they do not sell nearly as well as the pseudoscientific ones.

First, we should remember that publishing firms are commercial enterprises. They sell products at competitive prices, and the most successful ones are those that sell the most. A publisher's main concern, like that of any legitimate business, is making as much profit as possible; it would be contrary to all the principles of busi-

ness practice to do otherwise. (Academic publishers, incidentally, are not totally immune from this; although they are subject to faculty editorial boards to ensure quality, they are often self-supporting, receiving little or no direct university support.)

I was once in a similar but reverse situation to Dr. Taves's. In the early 1970s, I was the editor of a lengthy scientific text that took a positive, interdisciplinary approach to the UFO question (i.e., many of the authors were impressed by some UFO data and entertained the extraterrestrial hypothesis). The text contained chapters by 15 physical, biological, and social scientists, and engineers; smaller contributions by scientists in numerous other fields served as supplements. In all, 23 Ph.D.-level or M.D.-level persons were involved. A preface was specially written for the book by a well-known physical scientist with impeccable credentials who had, at times, been critical of the UFO subject.

Our book was considered and turned down by no less than 32 leading trade and academic publishers. The years immediately following the release of the University of Colorado's authoritative Condon Report were bad ones for "pro-UFO" books, quite the reverse of our present situation. Publishers repeatedly explained to me that they sympathized with the purposes of the book but that UFO books simply would not sell anymore. One publisher expressed interest in a text which would directly confront the Condon Report. That was not our purpose. Another, one of the better-known physical-science publishers, agreed to produce a reduced version, omitting the important social science chapters. This proposal was declined.

I cannot help sympathizing, therefore, with Dr. Taves's experience. Maybe he should have proposed his book in 1972, and we should have prepared ours in 1978! (It never was published; it is now far too out of date and would require major re-working.) What both our experiences demonstrate is that book publishers are mainly concerned with profit, and maybe this is as it should be.

While I agree with Dr. Taves that it is a dangerous situation when endless streams of pseudoscience are promoted and gobbled up by a gullible public, the alternative, some form of media control, would be even more dangerous. Having lived a few years under the last of the great fascist regimes of Europe and, briefly, under a socialist regime, I am acutely aware that true democracy has its price. One of the burdens a true democracy must endure is the constant mass bombardment by special interest groups, in this case the pseudoscience promoters. There are two ways to combat this: (1) educate the adult public to the best extent possible, which is supposedly what the CSICP is attempting to do, and (2) better educate the next generations now in school. But any attempts to directly control the free flow of ideas, however misguided they may be, would also inevitably interfere with the dynamics of democracy. Thus, I cannot agree with proposals such as that by the late Dr. Edward Condon when he called for publishers of pseudosciences to be publicly horsewhipped ("UFOs I Have Loved and Lost," *Bulletin of the Atomic Scientists*, December 1969).

The conflict which occurs when defending the free flow of ideas on the one hand and protecting reason, or even the truth, on the other is a real problem for a democracy, and it may not be fully resolved in the near future. An answer given to critics of the jury system in Anglo-Saxon law may apply here: "It's the best we can do."

It is a little unfair, then, to blame publishers for the popularity of pseu-

dosciences, or for contributing toward their popularity. The blame may be primarily with the educational system, although I am convinced that many people are susceptible to pseudoscientific beliefs *regardless* of the quality of their early or higher educational experiences. If a segment of the population opts to accept irrational beliefs, publishers cannot really be blamed for meeting the demand, or for legitimately profiting from this phenomenon.

J. Richard Greenwell
Research Coordinator
Office of Arid Lands Studies
University of Arizona
Tucson, Ariz.

The sounds of silence

Again, one of the leading lights in the wonderful world of parapsychology has fallen silent when asked to produce. Z. W. Wolkowski of the Institute of Paraphysics in Paris, who has been an ardent fan of Jean-Pierre Girard, the now-unfrocked "psychic," declared that Professor John Taylor of King's College, London, witnessed the bending of a metal sample sealed in a plastic tube as part of a definitive test devised by me. I have been offering $10,000 of my personal money to any performer of a genuine psychic event, and Wolkowski has now declared that it has taken place.

But there's more to it than that. I had submitted a set of five tubes to Taylor back in 1975, with the provision that the entire set be given to one performer, and that the set be returned within six months. I never saw any of the tubes again. And when I checked with Professor Taylor, he told me that he had given two of them to Wolkowski to test Girard with and that he had *not* witnessed any bending, as Wolkowski claimed. Now, in writing to Wolkowski, I am unable to (*a*) get any answer from him, (*b*) have my set of samples returned as agreed, and (*c*) understand the attitude of a claimed scientific organization when asked for simple cooperation.

John Taylor, in a report to *Nature* magazine in the U.K., has decided that there is no basis for belief in psychokinetic or ESP powers. This is in sharp contrast to the opinions he expressed in his book, *Superminds*, wherein he defended his personal conviction that dozens of British children could bend spoons with their minds. It was no easy matter for a mathematician of Taylor's stature to thus back down from a firmly held opinion.

How, I must ask, can parapsychologists expect that any useful dialogue can be established when they consistently refuse to answer simple requests for information and cooperation? Currently, I am engaged in an exchange of letters with one David Jacobs of the Maharishi International University in Fairfield, Iowa. My question is simple: Have any TMers been able to perform levitation, and if so, may we see some evidence of it? Rather than answering my question—which any child can understand—Jacobs sends me volumes of scientific papers dealing with highly instrumented tests done on meditators who *feel* they are levitating. But the basic question remains unanswered—Did any of the 40,000 who took the levitation course *ever get off the ground*? Simple yes or no answers seem beyond these experts.

It's about time that the many agencies who fund these people begin to ask the basic questions and not allow themselves to be "snowed" by overinstrumentation, technical doubletalk, and semantic evasion of the simple facts.

James Randi
Rumson, New Jersey

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- To prepare bibliographies of published materials that carefully examine such claims.
- To encourage and commission research by objective and impartial inquirers in areas where it is needed.
- To convene conferences and meetings.
- To publish articles, monographs, and books that examine claims of the paranormal.
- To not reject such claims on a priori grounds, antecedent to inquiry, but rather to examine them objectively and carefully.

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